

Meridian Mail

Messaging Overview

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January 1998

This edition of the *Product Overview* combines the Modular Option GP system information with the other CPE Meridian Mail systems. It includes all new feature information for Meridian Mail Release 12.

This guide consolidates the information from the Product Description guides for Meridian 1 systems and the Modular Option GP. It is renamed the *Messaging Overview*.

Contents

1	Product overview	1-1
	General description	1-2
	Administration	1-4
	Configurations (M1)	1-5
	Configurations (DMS)	1-6
	New administrative features for Meridian Mail 12	1-9
	New telset features for Meridian Mail 12	1-12
	Basic voice services	1-13
	Features common to both MMUI and VMUIF	1-14
	Features unique to MMUI	1-20
	Features unique to VMUIF	1-27
	International language capability	1-32
	Optional multimedia services	1-33
	Other optional services	1-35
	Meridian Mail and other applications	1-38
2	Maintenance and administration	2-1
	System maintenance	2-2
	Administrator functions	2-5
3	Configurations	3-1
	Overview	3-2
	Features common to all systems	3-3
	Data links	3-6
	Card Option systems	3-8
	Modular Option systems	3-12
	Modular Option EC systems	3-17
	Modular Option GP systems	3-22
	EC-11 systems	3-27

4	Technical specifications	4-1
	Overview	4-2
	Section A: M1 family technical specifications	4-3
	M1 system capacities	4-4
	M1 system configurations—an overview	4-6
	Section B: DMS family and SL-100 technical specifications	4-9
	Modular Option GP system capacities	4-10
	Section C: Standards	4-13
	Regulatory standards	4-14
	Environmental requirements	4-15

Chapter 1

Product overview

In this chapter

General description	1-2
Administration	1-4
Configurations (M1)	1-5
Configurations (DMS)	1-6
New administrative features for Meridian Mail 12	1-9
New telset features for Meridian Mail 12	1-12
Basic voice services	1-13
Features common to both MMUI and VMUIF	1-14
Features unique to MMUI	1-20
Features unique to VMUIF	1-27
International language capability	1-32
Optional multimedia services	1-33
Other optional services	1-35
Meridian Mail and other applications	1-38

General description

Introduction

Meridian Mail is a comprehensive voice processing system designed for use with Nortel's (Northern Telecom) Meridian 1 Communication Systems.

The standard single-customer business voice mail system provides the full array of features and options provided to Meridian Mail customers using either the Meridian Mail User Interface (MMUI) or the Voice Messaging User Interface (VMUIF). A multi-customer system can be configured with both MMUI and VMUIF. Each customer group must use either MMUI or VMUIF.

The MMUI interface is a full-featured Nortel proprietary command-driven voice mail interface primarily designed for business users. Meridian VMUIF is an optional menu-driven interface similar to MMUI which is primarily designed for small business services to provide either a full-featured Voice Messaging system or only Call Answering and message retrieval. It is well suited for large campus environments such as universities and hospitals. Meridian VMUIF is compliant with the VMUIF world-wide standard.

Basic features

Each Meridian Mail user is assigned a private voice mailbox number which is set up by the administrator. Users log on to their mailboxes using a password which they create themselves. Using simple commands at the keypads on their touch tone telephones, users can compose and listen to voice messages, and perform general messaging functions such as replying to, forwarding, and deleting messages.

Meridian Mail can be integrated with the call-processing capabilities of your switching system to provide messaging features such as Call Answering and Voice Messaging.

Call Answering prompts callers to leave messages when there is no answer or the extension is busy; Voice Messaging allows users to compose messages to, and receive composed messages from, other Meridian Mail users.

In all its applications, Meridian Mail provides recorded prompts to guide the inexperienced user. These prompts remind the user of available functions and provide instructions suited for novices. The system detects delays in user input and supplies additional information to assist the hesitant user.

Optional services

In addition to the basic features, the following optional services are available:

Networking

- Meridian Networking (MMUI)
- Enterprise Networking (MMUI)
- Virtual Node AMIS (MMUI)
- Network Message Service (MMUI for single-customer, Meridian 1 systems only)
- AMIS Networking (MMUI and VMUIF)

Multimedia

- Voice Menus
- Voice Forms
- Fax on Demand
- Meridian ACCESS

Optional services can be tailored to the needs of Meridian Mail users.

Administration

Introduction

Meridian Mail is administered through a simple, menu-driven administrative interface available at a terminal or personal computer (PC). Using the administration menus, the administrator performs the initial configuration of the Meridian Mail system, maintains the user information base, creates voice applications such as announcements and Voice Menus, and monitors system usage and performance. The administrator also uses the menus to perform routine maintenance on the system.

If you have a Multi-customer system, the administrative tasks can be assigned to several administrators. For example, a system administrator would be responsible for setting up both the Meridian Mail system and customer groups to meet specific requirements and preferences. To maintain the customers on the system, a customer administrator may then be assigned to each customer or a group of customers. Of course, you may still have just one administrator overseeing the whole system. In this case, the administrator would perform both system and customer administration tasks.

Integrated Mailbox Administration

Integrated Mailbox Administration (IMA) allows voice mailboxes to be created automatically when telephone sets are set up on the Meridian 1. The switching system communicates with Meridian Mail to add user information to the user database.

To take advantage of this feature, the Meridian 1 requires X11 Release 19.

Configurations (M1)

Configuration options Meridian Mail is available in several configurations to suit existing switching equipment. Modular Option and Modular Option EC serve Meridian 1 switches.

Note: For the most part, from a Meridian Mail perspective, the Meridian 1 and SL-1 switches are the same. For simplicity, only the term “Meridian 1” is used when referring to these switches.

Meridian Mail uses the Automatic Call Distribution (ACD) functions of the Meridian 1 to connect users to voice services. Calls to voice services are distributed to the available Meridian Mail voice channels through the queueing functions of ACD.

System upgrades and expansions Customers can also upgrade or expand existing systems to new configuration options. For more information on the various hardware configurations, see Chapter 3, “Configurations.”

Voice channels connect the voice lines from the private branch exchange (PBX) to the processing circuits in Meridian Mail. The PBX and Meridian Mail also exchange call-related information through a data link.

Meridian Mail voice channels are provisioned in increments of four channels, or in the case of Modular Option EC, four or eight channels. Larger configurations are achieved by adding more nodes. Each node handles up to 12 voice channels; or, with the addition of a fourth voice processing card, up to 24. Therefore, the smallest Meridian Mail configuration is a single-node, 4-channel system; the largest configuration is a 5-node, 96-channel system.

Note: In systems with three or more nodes, there are no voice processing cards in node 1.

Configurations (DMS)

Introduction

Meridian Mail Modular Option GP uses the Simplified Message Desk Interface (SMDI) protocol to communicate call-related information. It travels over the data link between Meridian Mail and the following switches:

- DMS-10
- DMS-100
- Meridian SL-100
- AT&T # 1 AESS
- AT&T #5 ESS
- non-Nortel PBXs

Meridian Mail voice ports are provisioned in increments of four ports. Larger configurations are achieved by adding more nodes, each node supporting up to 16 voice ports, depending on the configuration. The smallest Meridian Mail configuration is a single-node,4-channel system; the largest configuration is a 5-node, 64-channel system.

For DMS-10, calls to voice services are distributed to the available Meridian Mail voice ports through the functions of a Multi-Line Hunt Group (MLHG). For DMS-100 and SL-100 systems, calls to voice services are distributed to the available Meridian Mail voice ports through the functions of a Uniform Call Distribution (UCD) group.

Use with PBXs

With the addition of the VoiceBridge PBX integration unit, the Meridian Mail Modular Option GP system can be used with selected models of AT&T and ROLM PBXs. For these non-Nortel PBXs, calls to voice services are distributed to available Meridian Mail voice ports through the function of the VoiceBridge.

Other PBXs and Central Office switches

Meridian Mail is primarily designed to connect to Nortel switching equipment through the SMDI link. However, it is possible to connect Meridian Mail to a wide range of other switches. The Meridian Connections feature enables Meridian Mail to connect to selected models of AT&T and ROLM PBXs through the SMDI protocol. Call-related information is exchanged as if connected to a DMS-100 switch. In cases where SMDI protocols are not supported on the switch, Meridian Mail systems can be connected through voice ports and used for Interactive Voice Response (IVR) and Automated Attendant applications.

The Meridian Mail system can also connect to AT&T #5 ESS and AT&T #1 AESS in a CPE Centrex configuration. In this case, the customer owns the Meridian Mail system (that is, it is located on the customer's premises), but uses a Centrex service provided by the telephone company or service provider.

Meridian Mail requires a data link with the PBX or central office switch in order to exchange call-related information with the PBX or DMS, and thereby increase the amount of information that can be given to Voice Messaging users regarding the originators and recipients of messages.

Meridian Connections

Meridian Connections enables Meridian Mail to connect to non-Nortel PBXs. Integration is provided by a VoiceBridge PBX integration unit.

Through digital set emulation on the AT&T or ROLM PBX, the VoiceBridge provides the calling and called party information to Meridian Mail by means of the SMDI protocol. The VoiceBridge enables the PBX to emulate a Centrex switch and Meridian Mail operates in exactly the same manner as if the PBX supports SMDI protocol.

The AT&T and ROLM PBX models that are supported are as follows:

Brand	Model type
AT&T	System 75 series PBX (R1V1 software or greater)
AT&T	System 85 series PBX (R2V1 software or greater)
AT&T	Definity series PBX (G1V1 or greater software)
ROLM	8000 CBX (version 8003 or greater)
ROLM	9000 CBX
ROLM	9751 BCS (models 10, 40, 50, and 70)

New administrative features for Meridian Mail 12

Remote Site Maintenance Enhancement

Remote Site Maintenance Enhancement is part of the Network Administration in the MMI and is used to set up Meridian Networking, Enterprise Networking, and Virtual Node AMIS sites. Enhancements to the Remote Site Maintenance feature improve the efficiency of maintaining remote sites by reducing the screen traversals required to view or update the sites, particularly on systems that have more than 14 sites.

When selected from the Network Administration menu, Remote Site Maintenance displays a new screen called the Find Remote Sites screen. This screen lists only those sites that match the defined selection of criteria. This enables the administrator to work on a smaller subset of remote sites, thus reducing the amount of paging up and down.

Network Broadcast Enhancements

This enhancement allows users to send a broadcast message to all users at the following locations:

- the local site, including all of the local locations on NMS-MM systems
- a single local NMS-MM location
- a single remote site
- a single remote NMS-MM location and every site
- every site and location in the network

Network Status Enhancements

The Network Status screen is part of the Network Administration in the MMI and displays the status of all the defined remote sites. An administrator can now add a Find Form front end so that a subset of remote sites matching a specified search criteria is displayed. The screen now fits 15 remote sites on a page which further helps to reduce paging up and down.

**Meridian Mail
AutoAdmin**

Meridian Mail AutoAdmin is a new feature that allows the administrator to input data into one central system which is accessed by other systems for automatic administration.

The administrator adds, views, updates, and deletes mailboxes from Meridian Mail through a PC. A set of C Language Application Programming Interfaces (APIs) manipulates the mailboxes from a Windows application program which runs on Microsoft Windows 95 and Windows NT.

Message Trace

The Message Trace feature allows the tracking of all message activity within a mailbox. The three types of messages that are tracked within a mailbox are as follows:

- messages deposited in a mailbox as a result of compose and send or network message delivery, and the corresponding effect on the Message Waiting Indicator (MWI)
- messages deleted by the system due to the fact that they have passed the read retention time limit
- messages added to a mailbox as a result of a selective restore and the corresponding effect on the MWI

**Increased ESN
Prefixes**

The Increased ESN Prefixes feature allows two or more ESN Home Location Codes (HLOCs) to be defined for a single switch. The network database and the network administration allows up to 10 ESN prefixes to be defined for each site or location.

All of the existing network functionality is maintained with this feature.

**Find Local Voice User
Enhancements**

This feature enhances the existing search capability of the Find Local Voice Users screen with the addition of 20 fields that can be searched on, either by themselves or in combination with other fields.

**More Mailbox
Extension DNs**

The administrator can now define up to five additional 15-digit extension DNs for each local voice user. This increases the maximum number of extension DNs to eight, including the Primary DN.

Call Routing without Personal Verification

The Call Routing without Personal Verification feature provides the option for a mailbox subscriber to have his or her phone number played to callers rather than his or her personal verification during Call Answering (CA). Additionally, this feature provides the option for the administrator to set up Call Answering as a service for an alternative to Express Messaging.

Remote Notification Enhancements

Meridian Mail Remote Notification provides a means for users to be notified of new messages in their mailboxes from remote telephones or paging devices.

Two new capabilities have been added to enhance this feature:

- Delivery of the contents of a voice message which notifies a voice pager. The user can specify the type of notification sent, such as notification or both the notification and the contents of the new voice message.
- Delivery of the number of the originator of the message, which sends the notification to a numeric pager or a paging service. The two types of notification available are callback number, or both the callback number and the phone number of the caller separated by a special character, such as a space.

New telset features for Meridian Mail 12

Network Broadcast Enhancements

For users on Meridian Mail Networking systems, the Network Broadcast feature provides an easy way to address a message to all the network users at any of the following sites:

- the local site, including all of the local locations on NMS-MM systems
- a single local NMS-MM location
- a single remote site
- a single remote NMS-MM location
- every site and location in the network

Speed Control

The Speed Control feature allows users to speed up (and subsequently slow down) the playback of voice messages residing in their mailboxes during a voice messaging session.

Prompts, system generated messages (such as Acknowledgements, SEER Trigger messages, and “The attached message that you sent could not be delivered” section of Non-Delivery Notifications), Voice Form response notifications, personal greetings, and personal verification are not affected by this feature.

While playing a voice message, the user can increase the playback speed by pressing 2 3, and subsequently decrease the playback speed by pressing 2 1. Pressing 2 1 or 2 3 while playing an Acknowledgement, SEER Trigger, or Voice Form response notification message, skips the message to the start or end of the message respectively.

Basic voice services

Overview

MMUI and VMUIF offer two basic voice services: Voice Messaging and Call Answering. Only VMUIF can be set up to provide either both services or Call Answering only.

Call Answering

This service is integrated with the call-forwarding features of the switching equipment (Call Forwarding on Busy or No-Answer). This feature allows a user's mailbox to function much like an answering machine. Callers are able to leave messages for users who are away from their desks or on the phone. A greeting (recorded in the user's voice) is played, and the caller is prompted to leave a message after the tone.

When new messages have been received, the user is notified by one of the following two methods, depending on how the system has been configured:

- The message waiting indicator (MWI) on the telephone set lights up.
- The user receives an interrupted dial tone when picking up the receiver.

The user can retrieve and listen to these new messages.

Voice Messaging

Voice Messaging is a fast, reliable, and efficient method of communication that uses straightforward, easy-to-remember commands to control the range of features offered. The administrator provides each user of Voice Messaging with a private voice "mailbox." The user then logs on to the mailbox using a password.

Note: For VMUIF, passwords are not required for users who are logging in from their own telephone sets.

A set of simple commands lets the user perform even sophisticated messaging activities quite easily. Context-sensitive prompts offer guidance at every step. The Help service, accessed by pressing one key, supplements the prompts if the user desires, and speeds the learning process at the same time.

Features common to both MMUI and VMUIF

Overview

Descriptions of the features that are common to both MMUI and VMUIF follow. Additional features that are unique to MMUI and VMUIF are described as follows:

- MMUI on page 1-20
- VMUIF on page 1-27

Mailbox Class of Service

Mailbox Class of Service (COS) provides an effective method of local user administration. Each user is assigned a class of service. The administrator maintains the COS. This provides a quick and simple method of determining the mailbox properties for groups of users (for example, for billing purposes).

Mailbox password

Users can change their own logon passwords to ensure the privacy of their mailboxes. In addition, the administrator can set minimum password length and password expiry dates to ensure that secure access to messages is maintained.

Password expiry warning

Password expiry warning is a reminder from the system that your password is nearing its expiry date. It is time to change your password.

Password suppression

When the user logs on to any Meridian Mail application on an AML system and enters a password, the user's password is not displayed on the console. It is replaced by a minus sign for each digit of the password.

Mailbox access

You can access your private mailbox to retrieve messages, record a greeting, or create a password. You can be notified that you have a message waiting by a flashing indicator or, if your set does not have this feature, by an intermittent dial tone.

Logon

Logon allows users to access their mailboxes from their own or a remote phone. Once logged on, the user is informed of any

new, unread, and urgent messages in the mailbox. Messages are announced in order of arrival.

On MMUI systems, users are also informed of messages that have been created but not yet sent. These are announced in order of creation.

The user can play any message as it is announced or, on MMUI systems, skip to another message. On VMUIF systems, the user cannot skip a message, but must specify whether to keep it, delete it, or save it as new (unread).

Autologin

Autologin allows users to log on to Meridian Mail from their own telephones without entering a mailbox number and password. On MMUI systems, this feature must be enabled by the administrator.

Logon from Call Answering

Logon from Call Answering allows a user to log on to his or her own mailbox without hanging up after leaving a message at another user's mailbox.

Access security (incorrect logon)

Access security (incorrect logon) locks the mailbox if too many logon attempts are made using an incorrect password. The mailbox is locked until the administrator restores access privileges.

Logoff

Logoff disconnects you from Meridian Mail Voice Messaging.

Greetings to callers

Personal greeting

Personal greeting allows users to create customized personal greetings for callers reaching their mailboxes through Call Answering. On MMUI, greetings can be personalized for both internal and external callers. The greeting can be changed as frequently as required.

Default greeting

Default greeting is a system greeting that is played if the user chooses not to record a personal greeting.

Personal verification (spoken name)

Personal verification (spoken name) allows users to record their names. This personal verification then replaces the mailbox number in system prompts dealing with the user's mailbox.

Options for callers**Skip to record**

Skip to record allows frequent callers to skip over a user's mailbox greeting and proceed directly to recording a message.

Message receive

Remote Notification allows users to receive notification of messages at remote telephone or pager numbers.

Message playback**Mailbox summary**

Mailbox summary delivers, after login, a count of messages as follows:

- on MMUI systems, the number of new messages and how many are urgent
- on VMUIF systems, the number of messages in the mailbox and how many are new

Play

Play begins or resumes playback of a received or composed message, spoken name, or greeting.

Autoplay

Autoplay causes messages to be automatically played in turn after logon.

Delete

Delete removes a message from the user's mailbox.

Restore

Restore retrieves a message that is deleted during the current session.

Skip forward

Skip forward moves ahead five seconds in the message and then resumes playback.

Skip backward

Skip backward moves back five seconds in the message and then resumes playback.

Full mailbox notification

Full mailbox notification prompts users to delete messages when their mailboxes are almost full.

If a VMUIF subscriber's mailbox is full, callers are unable to leave messages.

Autodelete

Autodelete allows the system to delete messages automatically after they have been in users' mailboxes for a specified length of time.

Message send**Record**

Record allows a user to start recording a message.

For existing messages on MMUI systems, the record function can be used repeatedly to add to, or edit, the message already recorded before sending it. On VMUIF systems, messages cannot be edited; they must be recorded again.

Compose

Compose allows users to compose messages to, and receive composed messages from, other Meridian Mail users.

Receiving a composed message is different from receiving a regular message.

A composed message is first recorded, or composed, and then sent to one person or a number of people simultaneously. When a composed message is sent, the recipient's phone does not ring. Instead the message is deposited directly in the user's mailbox. In this case, the sender of the message does not intend to speak directly to the recipient.

On the other hand, a Call Answering message is deposited in a person's mailbox after someone directly dials the user's extension and the phone rings but is not answered or is busy. In this case, the caller does want to speak with the user, but is unable to reach him or her and, therefore, leaves a message instead.

Personal Distribution List

Personal Distribution List allows a user to create a personal distribution list of other users on the Meridian Mail system. A user can create up to nine personal distribution lists containing up to 99 mailbox numbers each.

On MMUI, numbers for Meridian Mail remote users on Meridian Networking and Virtual Node AMIS can be included in personal distribution lists. Refer to the section entitled "AMIS Networking" on page 1-19 for a description of an AMIS virtual node.

On VMUIF, personal distribution lists can contain external numbers, or mailbox numbers, for local users and AMIS Networking.

System Distribution List

System Distribution List allows the system administrator to create organizational distribution lists containing 120 mailboxes each. System distribution lists can only contain mailbox numbers for local users or remote users on Meridian Networking or Virtual Node AMIS.

Broadcast Message

Broadcast Message allows the system administrator, or other user authorized by the system administrator, to send a message simultaneously to all user mailboxes in the system.

Acknowledgment request

Acknowledgment request informs the sender of a message as to when the message was played by the recipient. For AMIS Network users, the acknowledgment only indicates that the remote site has received the message. There is no guarantee that the message has been played.

Send

Send allows users to send the outgoing message to addressees.

Non-Delivery Notification

Non-Delivery Notification informs the sender that a message could not be delivered.

Delivery to Non-Users (optional)

Delivery to Non-Users (optional) allows users to compose and send messages to telephone numbers that are not part of a Meridian Mail system or network.

Help

The Help service provides users with context-sensitive general help information and prompts.

AMIS Networking

AMIS Networking allows networking among non-Meridian Mail users without having to predefine any of the remote sites. A message can be addressed to any user by means of a direct dial system access number plus a unique mailbox identifier.

Features unique to MMUI

Overview

Voice Messaging is a fast, reliable, and efficient method of communication that uses straightforward, easy-to-remember commands to control the range of features offered. The administrator provides each user of Voice Messaging with a private voice “mailbox.” The user then logs on to the mailbox using a password.

A set of simple commands lets the user perform even sophisticated messaging activities quite easily. Context-sensitive prompts offer guidance at every step. The Help service, accessed by pressing one key, supplements the prompts if the user desires, and speeds the learning process at the same time. The following is a summary of the MMUI Voice Messaging features. For more information on using these features, see the *Meridian Mail Voice Messaging User Guide* (P0741311).

Greetings to callers

Greetings to caller features include the basic features described on page 1-13.

Revert to Attendant

Revert to Attendant allows the service provider to designate an alternate answering position. The alternate number may also have a voice mail greeting.

Custom Optional Revert

Custom Optional Revert allows an individual subscriber to designate an alternate answering position to which callers can transfer.

Message playback

Message playback features include the basic features described on page 1-13.

Play envelope

Play envelope plays back the name or mailbox number of the sender and any other summary information about the message (for example, a message classified as Urgent or Private). This information is called the envelope.

Call identification

Call identification in the header allows, within a subscriber group, the name of the caller, either prerecorded or the spoken name, to be incorporated into the message header. See “Spoken name” in the “Greetings to callers” section.

Forward

Forward allows users to forward an existing message to one or more users.

Next message

Next message allows a user to advance to the next message in the mailbox.

Previous message

Previous message allows a user to move back to the previous message in the mailbox.

Go to

Go to allows a user to move directly to a specified message in the mailbox. This allows the user to listen to a message of particular interest.

Message reply**Call Sender**

Call Sender automatically initiates a telephone call to the sender of the message the user has just listened to. Using Call Sender, the recipient of a message can return a call immediately, without looking up or dialing the sender’s number, by pressing a single number on the keypad.

Reply

Reply allows a user to reply automatically to the sender of a message. Using this feature, a user can reply directly to the sender of a voice message without entering the sender’s mailbox number.

Reply all

Reply all allows a user to reply automatically to the sender and all other recipients of a message.

Message send

Message send features include the basic features described on page 1-13.

Name Addressing

Name Addressing allows users to address messages by name instead of mailbox number.

Message classification

Message classification classifies a message by priority as Urgent, Standard, or Economy (for delivery over the network). An Urgent message is announced when a user logs on. Urgent and Standard messages are sent within a maximum time after their submission. Economy messages are sent at a specific time of day, usually during off-hours.

A message can also be designated as Private. A private message cannot be forwarded by the recipient to any other user.

Timed Delivery

Timed Delivery allows a user to specify a time for message delivery. When the user issues the Send command, the message is retained by Meridian Mail until the specified time.

Express Messaging

Express Messaging allows a user to leave a message in another user's mailbox without having to

- log on to Meridian Mail to compose and send the message
- call the person directly (that is, ring the person's phone)

A special Express Messaging number is defined by the administrator. To use Express Messaging, a user dials the Express Messaging number and enters the mailbox number of the person for whom he or she wants to leave a message. The user is then prompted to leave a message. Callers can also be transferred to Express Messaging to leave messages in mailboxes.

Note: If networking is installed, Express Messaging cannot be used to send a message to a user at a remote site, even if that user is defined on the system as a remote voice user.

Dialing options**Thru-Dial**

Thru-Dial allows a user to place a telephone call while logged in to Meridian Mail. This alleviates the inconvenience of logging off to place a call. Thru-dial can also be used with the name dialing feature.

Name Dialing

Name Dialing allows a user to place a call by entering the person's name instead of the extension number. This is particularly useful for automated attendant applications.

Dual language prompting (optional)

This feature is intended for multilingual systems. It allows certain system prompts to be played first in one language and then in a second language. This is especially useful in areas where a substantial percentage of the population is bilingual. For example, in many parts of Canada, it is essential that basic system prompts be repeated in both English and Canadian French.

The administrator selects the first and second languages. The prompts that are affected by this feature are prompts that are heard

- by users during mailbox logon
- by external callers during Call Answering sessions
- by callers during Express Messaging sessions
- when using the hospitality voice service (HVS) if installed

Networking

The Meridian Mail Networking feature provides two message transfer protocols that allow Meridian Mail to network with up to 150 other Meridian Mail sites.

These sites are connected through the long distance network, Direct Distance Dialing (DDD), tie lines, or digital trunks.

Meridian Mail Networking allows Meridian Mail users to send, receive, reply to, and forward voice messages to users located at other Meridian Mail sites, using the same commands as they would for users on their own system.

The two message protocols are

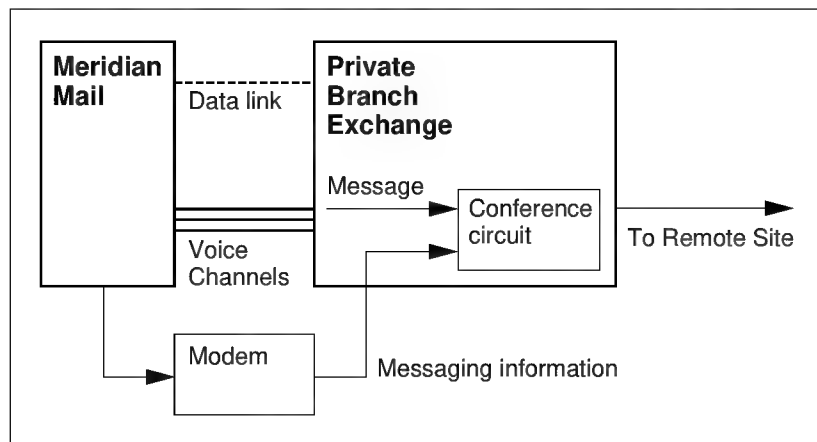
- Meridian Networking
- Enterprise Networking

Meridian Networking

Meridian Networking connections are established automatically by Meridian Mail through modems connected to the system. Meridian Mail uses the modems in conjunction with conferencing circuits on the private branch exchange (PBX) to communicate the message and messaging information to the remote networking site).

Meridian Networking diagram

This is a generic schematic diagram of Meridian Networking.



Enterprise Networking

Enterprise Networking connections use DTMF signaling based on proprietary extensions (customized by Nortel) to the AMIS protocol instead of modems to transit messages between sites.

Enterprise Networking may be used outside of North America because it uses DTMF signaling. This is a global standard that passes signals through voice compression with no distortion.

Virtual Node AMIS Networking

Virtual Node AMIS Networking allows an AMIS site to be set up as a virtual node in a network that is equipped with both Meridian Mail Networking and AMIS Networking. Users at a Meridian Mail site are then able to send a message to those at an AMIS site using the same Meridian Networking addressing scheme.

Network Message Service (NMS)

This feature only applies to single-customer platforms connected to an M1.

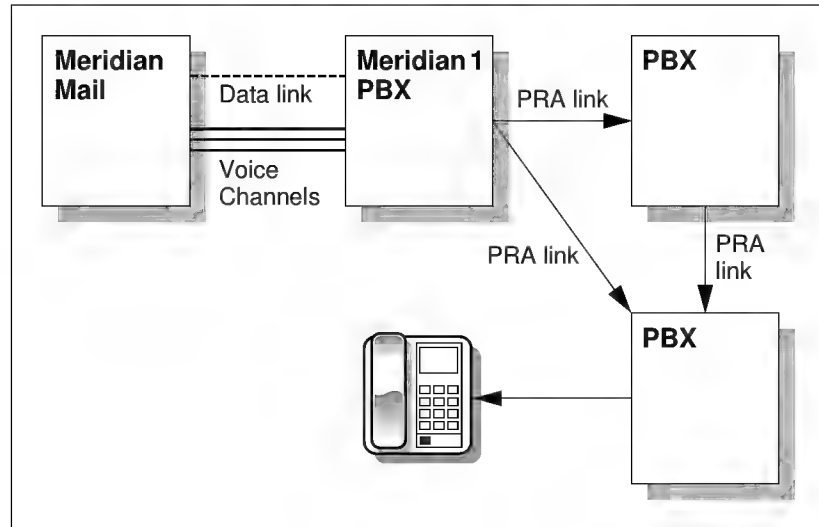
Network Message Service (NMS) is an optional feature which allows one Meridian Mail system on a Meridian 1 at a prime location to provide voice services to multiple secondary PBX switches. The network, consisting of a Primary Rate Access (PRA), provides customers at satellite locations with complete Voice Messaging feature functionality.

NMS allows users at satellite locations to access Meridian Mail and retrieve messages using the same method as users at prime locations. An unanswered call to a user is forwarded across the network to Meridian Mail and deposited into the appropriate user mailbox. Meridian Mail then directs the switch to notify the recipient of this call by enabling the Message Waiting Indicator (MWI).

NMS enables efficient use of unused Meridian Mail capacity by extending Voice Messaging services to additional users. NMS enables customers to offer Voice Messaging to smaller locations that cannot justify the purchase of a dedicated Meridian Mail system.

Network Message Service overview

This diagram shows the NMS system.



G100178

Hospitality voice services

The Hospitality voice services (HVS) feature is mutually exclusive with regular Voice Messaging. It provides the same functionality as Voice Messaging but is customized to suit the needs of the hotel industry. For example, when adding mailboxes to the system, you can specify them as either staff mailboxes or guest mailboxes. Staff mailboxes have full-featured Voice Messaging, whereas guest mailboxes have only basic capabilities.

In most hospitality environments, Meridian Mail is connected to a Property Management System (PMS). Most routine functions, such as check-in and check-out, are performed using the PMS. However, should the PMS be out of service for any amount of time, the Meridian Mail Guest Administration Console (GAC) provides some basic functionality for manual control of guest mailboxes.

Features unique to VMUIF

Overview

VMUIF Voice Messaging offers either full-featured Voice Messaging or only Call Answering and message retrieval functionality to small business or residential subscribers. Call Answering subscribers do not have access to Voice Messaging functions (they cannot compose and send voice messages).

Single-line small business or residential subscribers with touch tone (DTMF) capability, have access to all the basic features with some enhanced options. A special simplified Call Answering interface is available for households with dial pulse capability.

Subscribers with DTMF capability can access their private mailbox to retrieve messages, record a greeting, or create a password. They can be notified that they have a message waiting by a flashing indicator or by an intermittent dial tone on their telephone set, depending on the capabilities of the supporting switch and telephone.

Features available to users with touch tone sets

The Voice Messaging features described below are available for users with touch tone (DTMF) telephone sets. Users with dial pulse sets can only use the Call Answering and message retrieval functions listed on page 1-30.

Descriptions of the features available to VMUIF DTMF telephone sets follow.

Mailbox password

Password features include the basic features described on page 1-13.

If you wish to access your mailbox from a remote phone, you must create your own password. You can change your password whenever you wish. Your system administrator sets a minimum password length and an expiration date.

Optional password

Optional password allows residential subscribers, who intend to access their mailboxes exclusively from their home phones, to choose not to create a password.

Mailbox access

Mailbox access features include the basic features described on page 1-13.

Logon greeting

Logon greeting welcomes users to Meridian Mail when they log on to their mailboxes.

Introductory tutorial

Introductory tutorial presents first-time login users with an introductory tutorial that explains how to record a greeting and how to create a password. Users can listen to the tutorial by selecting the appropriate menu options.

Call Answering only mailbox

Call Answering only mailbox means that a mailbox is set up to receive but not to send messages. In this case, compose is turned off in the class of service (COS) assigned to the user.

Send only mailbox

Send only mailbox means that a user's mailbox is set up to send but not to receive messages. In this case, Call Answering is turned off in the COS assigned to the user.

Family mailboxes

Family mailboxes allows a user to log on to a main mailbox plus up to eight submailboxes from his or her own or a remote phone. The user accesses the mailbox by dialing the system access number and entering his or her personal password for his or her submailbox.

Family mailbox is either enabled or disabled in the COS assigned to the user. If enabled, the number of allowed submailboxes is also determined by the COS. However, the owner of the main mailbox is responsible for setting up and administering the number of submailboxes once the administrator has specified the number of submailboxes that can be created.

Disable lockout

Disable lockout automatically resets a user who has been locked out due to a number of unsuccessful login attempts. The reset occurs after the time period specified by the administrator in the COS assigned to the user.

Lockout revert

Lockout revert automatically transfers a user who has been locked out due to a number of unsuccessful login attempts to a DN specified by the administrator in the user's COS.

Message playback

Message playback features include the basic features described on page 1-13.

Save as new

Save as new allows users to retain read messages as “unread” or “new.” These messages are identified as new messages when users log in again.

Volume control

Volume control allows users to control the volume of messages during playback at any time. Four volume levels may be set. The volume level remains in effect until it is changed. If the volume level is changed when the playback is paused or has finished, the user hears a verification of the change.

Message send

Send features can be used within the same customer group. They include the basic features described on page 1-13.

Send on disconnect

Send on disconnect automatically sends a message to the addressed mailboxes when the user hangs up before actually sending a composed message. This function must be enabled in the user's COS; otherwise, the composed message is deleted when the user hangs up.

User interface

The user interface is compatible with both MMUI and VMUIF. It supports full type-ahead, with proper handling of error messages. All prompts (except for error messages) can be interrupted or preempted.

Call Answering features for users with dial pulse sets

A special simplified Call Answering interface is available for households with dial pulse capability. Because you do not have a phone keypad to enter commands, much of the interface is system automated. You do not require a mailbox number, password, or greeting.

The following are the only features available to dial pulse sets.

Autologin

Autologin means that, for dial pulse set users, mailbox numbers or passwords are not required in order to log in.

Autoplay

Autoplay means that Message Summary and Message Playback follow automatically after Autologin. Messages are played in sequence with new messages first. Each message plays immediately after its announcement header.

No user commands are available; the user may hang up at any time or wait until the system terminates the session.

Autodelete

Autodelete operates automatically to delete all played messages, usually overnight.

Personal greeting

Personal greeting allows a user to record a personalized greeting. To do this, the user must call a Greeting change number. If the user does not record a personal greeting, the default system greeting is played.

DTMF

DTMF access means that if a dial pulse set user calls from other than his or her household phone to access the mailbox, the system requires a mailbox number and password. However, the system still operates as if it were accessed from a household phone (that is, it does not require the user to enter any commands).

If a DTMF command is received, the call reverts to the standard DTMF user interface. This means that the subscriber can take control of the call session by pressing any key after successful login. This allows the subscriber to perform the following functions on each message:

- replay
- keep
- delete
- save as new
- go to next message

International language capability

Overview

Meridian Mail can be configured to support several languages other than English and may be deployed in many countries around the globe. Meridian Mail can even be set up to provide different language prompts for different groups of users on the same system.

Alternate language capabilities include

Arabic	French	Portuguese (Brazilian)
Cantonese	• Canadian	Russian
Czech	• European	Spanish
Danish	German	• European
Dutch	Hungarian	• Latin American
English	Italian	Swedish
• American	Japanese	Thai
• Australasian	Korean	Turkish
• Female European	Mandarin (PRC)	
• Male European	Mandarin (Taiwan)	
• Irish	Norwegian	
• Message Alert	Polish	
Finnish	Portuguese (European)	

Note: Please check with your representative for specific language prompt availability.

Optional multimedia services

Introduction

Meridian Mail offers the following optional multimedia services:

- Voice Menu applications
- Voice Forms
- Fax on Demand

Voice Menu applications

Voice Menu applications are call-processing applications, created by the administrator, that allow callers to listen to recorded information, leave messages for specific users, or place calls.

Any number of Voice Menu applications can be created, each with a unique directory number which the user can dial to gain access to the application. These applications use Voice Menus which can be linked into a hierarchy. Each Voice Menu offers a maximum of nine actions to the user, one for each key on the telephone keypad.

Voice Forms

Voice Forms are optional applications, created by the administrator, that allow Meridian Mail users to collect voice information from callers over the telephone. A series of questions is played to a caller who responds to each question in sequential order. In responding to the questions, the caller is essentially filling out a form over the telephone.

Once the information is collected, it can be retrieved and transcribed to suit your individual requirements.

Fax on Demand

Fax on Demand allows administrators to create fax information. It also allows users to retrieve fax information directly using a fax phone, or to select fax items from a Voice Menu.

Fax information can be sent to the caller on the same call (by means of the fax phone), or the caller may be prompted for a callback number to send the fax a short time later.

To support the Fax on Demand feature, ports must be allocated as multimedia ports, and the Voice Menus option must be installed. Fax on Demand also requires 32-kbyte NVP cards on Modular Option systems.

Other optional services

Multi-Customer

Multi-Customer is an optional feature that allows a single Meridian Mail system to be divided into multiple customer groups. Calls received from other customer groups on the same system are treated as external calls. Users within a particular customer group are prevented from composing messages to users outside their own customer group (unless they are using AMIS Networking).

Note: On the Meridian 1, a customer can be divided into a number of tenants. A Meridian 1 “tenant” is equivalent to a “customer” on Meridian Mail. This means that on the Meridian 1, a Meridian Mail “customer group,” as discussed in this section, is actually a “tenant” of a Meridian 1 “customer.”

In order to have a fully functional multi-customer system, the Meridian 1 (Release 17 or greater) must have the following packages installed:

- Multi-Tenant Service (TENS) 86
- Console Presentation Groups (CPGS) 172. If this package is not installed, then the main customer (Meridian 1) attendant (instead of the tenant’s attendant) is selected when a caller reverts to the operator.

All restrictions set up through Multi-Tenant Service on the Meridian 1 apply to the customer on Meridian Mail.

Note that the Meridian Mail Multi-Customer feature can also be implemented in a single-tenant environment. For more details on the Multi-Customer and Multi-Tenant features, refer to the “Setting up the system” section in the *System Administration Guide for Multi-Customer Systems* (NTP 555-7001-302).

Customer groups are administered separately and may have customized values for

- available features
- default attendant revert DN
- broadcast DN
- maximum voice file size and retention limits
- security and access controls
- system greeting and default language

Voice Menu applications such as announcements, Voice Menus, Thru-Dial services, and Voice Forms (if installed) are specific to a customer group. You cannot create an application that applies to more than one customer.

Note 1: Some operational measurements are generated at the system level whereas others occur at the customer level. Traffic reports are generated at the system level only. Since users are assigned to particular customer groups, user usage reports are generated at the customer level.

Note 2: Meridian Networking can only be enabled for one of your customer groups. AMIS Networking, on the other hand, can be enabled for all customers if desired. Network Message Service (NMS) is not available in a Multi-Customer environment.

Multiple administration terminals

This feature allows you to configure up to three Multiple Administration Terminals (MATs) in addition to the main administration terminal. The main terminal can be used for performing user administration, voice services administration, and view mailbox class of service.

Up to four administrators can simultaneously log on to perform administration tasks. The only restriction is that no two administrators can work on the same user profile at the same time. If an administrator tries to access a user profile while another administrator is already logged on to the same profile, only the first administrator to access that profile will have modify and save privileges.

Disk-to-disk backup

In multi-node configurations, disk space can be allocated for the disk-to-disk backup function. This optional feature involves backing up the text data on one node to a special volume on another node. For example, the node 1 user volume is backed up on VS902T on node 2; and the node 2 user volume is backed up on VS901T on node 1.

Note: Disk-to-disk backup is not the same as disk shadowing. Disk-to-disk backup is performed on systems that have one disk per node. Disk shadowing is where each node has two separate disks, each pair storing the same data.

Disk-to-disk backups are done by the administrator and are designed to alleviate the need for frequent backups to tape. Backups to tape should still be carried out periodically for added security.

Disk Shadowing

Disk Shadowing, an optional feature, is available on the Meridian Mail Modular Option EC, and Modular Option platforms, and provides protection against any loss of data in the event a disk failure occurs. With disk shadowing, disks are added to Meridian Mail in pairs. As data is written to disk, both drives in a pair are updated simultaneously in real-time.

If one of the drives in a pair fails or needs to be repaired, it can be removed from service without loss of data or interruption of service. Once the faulty disk is replaced or repaired, it can be synchronized with the functioning disk so that the disks are once again mirror images of each other.

Multi-SMDI

This feature applies to systems with SMDI links only.

This feature allows a Meridian Mail system to support up to 12 SMDI links allowing a number of similar or different switches to be supported. As a result, several switches can share the message processing capabilities of the same Meridian Mail system.

Note: The number of SMDI links available depends on the number of nodes in the system.

Meridian Mail and other applications

Meridian Mail Reporter (optional) Meridian Mail Reporter, an optional feature, is connected to the system through RS-232 (Utility card) communication ports on the PC and Meridian Mail.

Meridian Mail Reporter provides file download capabilities through which billing records are received from the Meridian Mail system. These records are loaded into a database on the PC. Various predefined reports may then be produced from these records.

Meridian ACCESS Meridian ACCESS (Release 4), an optional feature, is available as a software platform for specialty applications integrating with various Meridian Mail hardware platforms. These include Interactive Voice Response (IVR) and VISIT Messenger (a desktop messaging application), which require specific development jointly defined between Nortel and its customers.

Applications developed with ACCESS Release 4 are not required to acquire a voice channel to communicate with the customer calling into, or being called by, the application service. For example, VISIT Messenger enables a user to view messages received on a PC screen. A telephone call (using a voice channel) is not required to perform this task.

Note: ACCESS Release 4 is available for internal Nortel use only. However, ACCESS Release 2 is compatible with Meridian Mail Release 11.

There are five categories of ACCESS applications.

Inbound applications

These are applications that provide a service to callers who dial in, either from an internal telephone (an extension on the PBX), or from an external telephone (a pay phone or home telephone). The service to which the caller dials in is usually an IVR service such as

- product ordering (airline tickets, catalogue purchases)
- educational registration (college and university courses)
- product information (audio catalogues or inventories)
- telephone surveys (audio questionnaires)
- telephone banking (account balances, transfers)

VISIT Messenger is another example of an inbound application; the caller can access the VISIT Messenger FAX subsystem in order to print a fax message.

Outbound applications

These are applications that call internal or external telephone numbers. The application asks Meridian Mail to initiate an outgoing call and provides a service (IVR or call processing function) to a customer. Examples of outbound applications include telemarketing operations and paging services.

Transactional messaging applications

These types of applications combine the characteristics of both inbound and outbound applications. Users typically call in to the service and leave messages in mailboxes (inbound). Subsequently, the application schedules a call to either a free agent or to the customer.

Administrative applications

These types of applications do not take incoming calls or place outgoing calls. An example of this type of application is electronic mail notification. Meridian ACCESS can be used to send summaries of voice messages to a host computer, receive notification of text messages, or turn on Message Waiting Indication at a telephone set. Paging services is another type of administrative application that is supported by Meridian ACCESS.

Desktop messaging applications

The key focus of these types of applications (such as VISIT Messenger) is to export Meridian Mail Voice Messaging capabilities to the user's desktop. This includes support for displaying and maintaining lists of voice messages, and support for Voice Messaging functions such as play, compose, and send. The desktop application places calls to the user when needed for playing or composing messages. The application does not need to answer calls and, in many cases, does not require a voice channel.

Chapter 2

Maintenance and administration

In this chapter

System maintenance	2-2
Administrator functions	2-5

System maintenance

Introduction

Meridian Mail has comprehensive maintenance facilities including

- automatic diagnostic reports
- diagnostics identifying fault conditions
- automatic system recovery from faults
- system courtesy down to ensure that no calls or messages are disrupted as the system is taken out of service
- remote maintenance access
- system backup to protect system data

System maintenance covers two broad areas: automatic maintenance and maintenance by human intervention.

Automatic maintenance

Automatic maintenance includes system diagnostics at the card level, reloading and reinitializing channels on a per-channel basis when necessary, initializing other programs fundamental to system operation, and monitoring all system events and errors. Events and errors are tracked and reported by System Error and Event Reports (SEERs). These can be viewed on the administration terminal screen, printed out, or both.

Maintenance by human intervention

The following two facilities are available for system maintenance:

- General system administration
- Tools and utilities

General system administration

Daily maintenance of the system is performed through menu-driven screens at the administration terminal. Daily maintenance involves backing up system data onto a tape or to another disk drive; setting and maintaining the system statistics and configuration; monitoring SEERs; and reporting any system faults to a technician as detailed in the SEERs.

Tools and utilities

Technical maintenance of the system is performed by the administrator or a technical craftsperson, either on-site or through remote terminal access. Technical maintenance involves testing voice functions and prompts, maintaining files, freeing disk space, and testing and changing cards when necessary. The technical craftsperson uses lower-level facilities than does the administrator.

System administration

The Meridian Mail system is designed to make the daily administration of the system simple and straightforward. Administrative activities are carried out through easy-to-use menus from three possible types of devices:

- multiple administration terminals (MATs)
- local ASCII terminals
- remote ASCII terminals

Multiple administration terminals (MATs)

If you have the Multiple Administration Terminals feature installed, you can have up to four administration terminals: one main administration terminal and three secondary terminals.

The primary terminal can be used for performing all aspects of Meridian Mail administration, whereas the secondary terminals can only be used for user administration, voice services administration, and view mailbox class of service. These secondary terminals are referred to as multiple administration terminals (MATs).

With the multiple administration terminals feature, up to four administrators can simultaneously log on to perform administration tasks. The only restriction is that no two administrators can work on the same user or voice service profile at the same time. If an administrator tries to access a user profile while another administrator is already logged on to the same profile, only the first administrator to access that profile will have modify and save privileges.

Terminals

The administration terminal (also used for system maintenance) can be an NT220, HP700/22, HP700/32, VT220, VT320, VT420, or VT520 terminal. Only one terminal is required to access both the Meridian 1 and Meridian Mail systems provided that the single terminal access feature is on both the Meridian 1 and Meridian Mail, and that the Meridian 1 is running X11 Release 19 or later software.

Note: Meridian Mail supports terminals with English characters only. The use of non-English characters may cause a data error.

Remote administration

A remote administration terminal can be connected to the Meridian Mail system through a modem. Compatible modems are

- Ven-Tel 9600 plus
- Ven-Tel EC2400-33 rev. 5.2 or 6.0 (with the MNP/X.PC feature)
- UDS 2440
- U.S. Robotics Sportster 14.4 (can be used for networking also)
- Hayes Optima 144
- Racal ALM3223

The modem can be connected to the same line as the local terminal and switched through an A/B switch box.

Note: Although the Ven-Tel modems are supported, they are no longer available.

Printers

A printer can be connected to the auxiliary printer port on the administration terminal. System Event and Error Reports (SEERs) and operational measurement reports are directed to this printer. A second printer can also be connected to a spare serial port on the Meridian Mail system if the printing of SEERs needs to be dedicated to one printer. However, only one of the printers can be used at one time.

Administrator functions

Introduction

The Meridian Mail administrator sets up the initial system configuration (normally a once-only operation) and performs some daily procedures needed for effective operation of the system. These procedures are performed either through the telephone or the administration terminal. Some procedures may need to be carried out frequently, perhaps daily, while others are carried out only occasionally. The following are typical tasks for the administrator.

At the telephone

Custom system greeting

Custom system greeting involves the recording of the system greeting.

Broadcast messages

Broadcast messages are used to send broadcast messages throughout the organization.

Voice prompt maintenance

Voice prompt maintenance involves the routine recording of prompts, announcements, and greetings used in voice services.

Personal Verification recordings

Personal Verification recordings allows the user or administrator to add a personal verification recording to a user's profile.

At the Meridian Mail administration terminal

If the Multi-Customer feature is installed, some of the following tasks are performed at the system administration level whereas others are performed at the customer administration level.

User administration

User administration maintains a current information base of users, the Class of Service (COS) list, and system distribution lists. User administration also involves adding, changing, or deleting voice mail boxes.

Note: If the Multi-Customer feature is installed, user administration is performed at the customer administration level only since users are associated with a particular customer group.

Class of Service (COS)

Class of Service (COS) is a template that contains information about the capabilities that a user has and the values that are assigned to specific parameters. It is essentially a method of classifying users according to their needs. When you add a user or customer group to the system, you must specify the Class of Service to which the individual belongs. This method of classifying users replaces the user models method used in releases older than Meridian Mail Release 9.0.

All new systems are installed without any COS defined. It is, therefore, up to the system administrator to define the COS initially. The task of defining COS can be done before or after the addition of customer groups. It is, however, recommended that this be done before any customers are added to the system since the process of provisioning customer groups involves adding users who must be assigned to an existing class of service.

Note: Meridian Mail classes of service are not the same as Classes of Service (COS) or Network Classes of Service (NCOS) on the Meridian 1. Classes of service replace user models which were used in releases older than Meridian Mail Release 9.0.

For more information on how to use COS on Meridian Mail to set up users and their mailboxes, see the chapter entitled “Class of service administration” in one of the following NTPs (according to your system configuration):

- *System Administration Guide* (NTP 555-7001-301)
- *System Administration Guide for Multi-Customer Systems* (NTP 555-7001-302)

For the Modular Option GP only:

- *System Administration Guide* (NTP 555-7051-307)
- *System Administration Guide for Multi-Customer Systems* (NTP 555-7051-308)

Integrated Mailbox Administration (IMA)

Integrated Mailbox Administration (IMA) allows user administration by way of the Meridian 1. (The Meridian 1 requires X11 Release 19). Refer to the appendix entitled “Integrated mailbox administration” in the Meridian Mail System Administration Guide (NTP 555-7001-301) for more information on how to use IMA to set up users and mailboxes.

General administration

General administration permits you to set general system parameters, and back up system data from the hard disk onto tape, or onto another disk drive (with the disk to disk backup option).

In a Multi-Customer system, the general administration functions are split up between the system administrator and the customer administrator. The General Options screen appears at both levels; however, they contain different parameters. Volume administration (backups) is performed at the system administration level.

Voice administration

Voice administration configures voice services, assigns phone numbers to voice services, and sets operational parameters and security for voice services. Voice administration also allows the administrator to create and maintain Voice Menu applications. The administration of Remote Notification is also done through the Voice Services Administration.

Channels are also assigned to voice services in voice administration. Each channel is designated as having either “basic” or “full service” capability (depending on your purchased configuration). Basic channels can only be used for Voice Menus or IVR applications. Note that announcements, prompt maintenance, Thru-Dial, and time-of-day control can be used on basic channels as well.

Voice administration is divided between system administration and customer administration in a Multi-Customer system. Most voice administration is done at the customer administration level. Here you can access the Voice Messaging Options screen, the Voice Security Options screen, the VSDN table, and the Outcalling Administration screen, as well as create voice menu applications and voice form applications (if installed).

At the system administration level, you can access the Voice Security Options screen, the Voice Services Administration screen, and the Outcalling Administration screen (although they appear different from the screens at the customer administration level). You can modify voice menu applications, but you cannot create them. You cannot do any voice forms administration as the system administrator. Voice form applications are created and maintained by the customer administrator.

Hardware administration

Hardware administration is used for obtaining general system configuration information.

In a Multi-Customer system, hardware administration is only accessible to the system administrator.

System status and maintenance

System status and maintenance views the operational status of the system and the activity of the different hardware components. You can access the Channel Allocation Table, including dedicating voice channels to a particular service, only when logged on as the system administrator.

In a Multi-Customer system, system status and maintenance is only accessible to the system administrator.

Operational measurements (OM)

Operational measurements (OM) obtains system and user usage statistics sorted by users, events and errors, message traffic, disk space, and other criteria.

In a Multi-Customer system, the system administrator can access all traffic reports. When logged on as customer administrator, you can access only user usage reports.

Networking administration

Networking administration defines and administers the networking component of the system. The administrator is responsible for the local site's view of the network.

Responsibilities include

- local site administration, through which the basic networking parameters of the local site are specified
- remote site administration, through which the connection parameters from the local site to selected remote sites are specified

In some installations, one administrator may be designated to maintain the networking parameters of several sites using dial-up access to these sites.

In a Multi-Customer system, Meridian Networking can only be enabled for one customer group, and administration is carried out at the customer administration level.

If AMIS Networking is installed, networking administration also involves administration of the AMIS service. AMIS can be enabled for as many customer groups as needed and is administered at the system administration level and the customer administration level on a Multi-Customer system.

Refer to the *Networking Services Administration Guide* (NTP 555-7001-335) for system access numbers.

Network Message Service

Network Message Service defines and administers the Network Message Service feature. The administrator is responsible for administration of all locations linked by NMS, which primarily involves connection details and user administration.

This feature cannot be installed on a Multi-Customer system.

Hospitality administration (if HVS installed)

Hospitality administration (if HVS installed) defines and administers the Hospitality service. The administrator is responsible for configuring hospitality voice services (such as Hospitality Voice Messaging, Express Messaging, and the post checkout mailbox), configuring the hospitality profile, monitoring the hospitality system status, and configuring hospitality installation parameters.

Chapter 3

Configurations

In this chapter

Overview	3-2
Features common to all systems	3-3
Data links	3-6
Card Option systems	3-8
Modular Option systems	3-12
Modular Option EC systems	3-17
Modular Option GP systems	3-22
EC-11 systems	3-27

Overview

Introduction

This chapter is divided into the following sections:

- The first section, entitled “Features common to all systems,” describes features which are available on the Meridian Mail Card Option, Modular Option, and Modular Option EC hardware platforms.
- The second section, entitled “Data links,” describes the methods of connecting to the switch or Meridian 1.
- The third section describes each of the assembly elements and configuration variants for the Meridian Mail Modular Option, Modular Option EC and EC-11 systems. This section also provides useful information to those considering an upgrade or expansion on their existing system.
- The fourth section describes the assembly elements and configuration variants for the Modular Option GP system.

Features common to all systems

Terminal interface

The link to the administration/maintenance terminal is an asynchronous 2400 bps RS-232 port on the MMP40 card. Multiple administrative terminals may be connected to RSM or utility card ports.

If you wish, you can change the terminal link speed on the MMP40 card to 9600 bps. If you change the speed, then you must ensure that the MMP40 card is labeled with the “9600 bps” sticker provided with the system.

A brief overview of how you can change the speed follows.

Changing the terminal link (console port) speed when installing for the first time

To change the terminal link speed when installing Meridian Mail for the first time, follow these steps.

Step	Action
1	Run the Console Port Speed Utility on the installation tape and change the speed on the MMP40 card to 9600 bps.
2	Set the terminal to 9600 bps.
3	Program the remote access modem to run at 9600 bps.
4	Proceed with the installation.

-

Changing the terminal link (console port) speed when converting to Meridian Mail 11

To change the terminal link speed when converting to Meridian Mail Release 11 from a previous release, follow these steps.

Step	Action
1	Run the conversion with the terminal and modem set at 2400 bps (the default).
2	Run the Console Port Speed Utility on the installation tape and change the speed on the MMP40 card to 9600 bps.
3	Set the terminal speed to 9600 bps.
4	Program the remote access modem to run at 9600 bps.
5	Reboot the system into service.

Note: You can use the Console Port Speed Utility at any time to change or reset the terminal link speed on the MMP40 card. Do not forget to

- change the speed on both the terminal and modem

Remote access modem

The following modems allow remote access to Meridian Mail by authorized maintenance personnel:

- Ven-Tel 9600 Plus
- Ven-Tel 2400-33 rev. 5.2 or 6.0 modem with the MNP/X.PC feature
- UDS 2440
- U.S. Robotics 14.4, 28.8, 33.6
- other equivalent modem

Networking modems

Ven-Tel 2400-33 rev. 5.2 or 6.0, or U.S. Robotics 14.4, 28.8, 33.6 modems with the MNP/X.PC feature are required for networking. They are connected to the RS-232 ports on the RSM card or the utility card (Modular Option EC) and allow Meridian Mail to establish and receive calls from remote Meridian Mail sites.

Disk to disk backup options

In multi-node configurations, disk space can be allocated for the disk to disk backup function. This optional feature involves backing up the text data on one node to a special volume on another node. For example, the node 1 user volume is backed up on VS902T on node 2; the node 2 user volume is backed up on VS901T on node 1.

It should be noted that if disk to disk backup is implemented, there is a reduction in voice storage capacity.

Data links

AML link

The link to the Meridian 1 is known as the Application Module Link (AML). This link is an RS-232 synchronous connection, supporting High-level Data Link Control/Link Access Protocol-Balanced protocol (HDLC/LAP-B). It is interfaced to the Meridian 1 by one of the two ports on the MMP40 card. This link connects to the ESDI or MSDL interface on the Meridian 1. The baud rate of the link is 9600 bps.

SMDI link

The link to the DMS-10, DMS-100, SL-100, and other central offices switches (for example, AT&T #1 AESS and AT&T #5 ESS) is known as Simplified Message Desk Interface (SMDI). This link is a 2400 bps asynchronous connection. It is interfaced to the I/O card on the switch (SL-100 and DMS-100: 1X89BA or 1X89BB; DMS-10: NT3T80BA, Dual SMDI Pack) by one of the two ports on the MMP40 card.

Multiple switches can be connected to a single Meridian Mail system, or a single switch can support a number of Meridian Mail systems.

ACCESS links

Multiple ACCESS links are supported on a single node. With multiple links, if there are two serial ports available for ACCESS links, a single node Meridian Mail system could have, for example, VISIT Messenger and Meridian IVR running at the same time.

ACCESS links can be configured on voice nodes only. The total aggregate ACCESS link speed cannot exceed 38 400 bps; the minimum is 4800 bps.

Reporter link

The link to Meridian Mail Reporter is a 9600 bps asynchronous RS-232 connection (minimum 2400 bps) to Meridian Mail Reporter by one of the following:

- one of the two ports on the MMP40 card
- one of the four ports on the node 1 Utility card on the Modular Option EC platform
- one of the four ports on the node 1 RSM card on the Modular Option platform

MS link

The MS link is similar to Reporter link except it can be run at up to 38 400 bps. The minimum is 2400 bps.

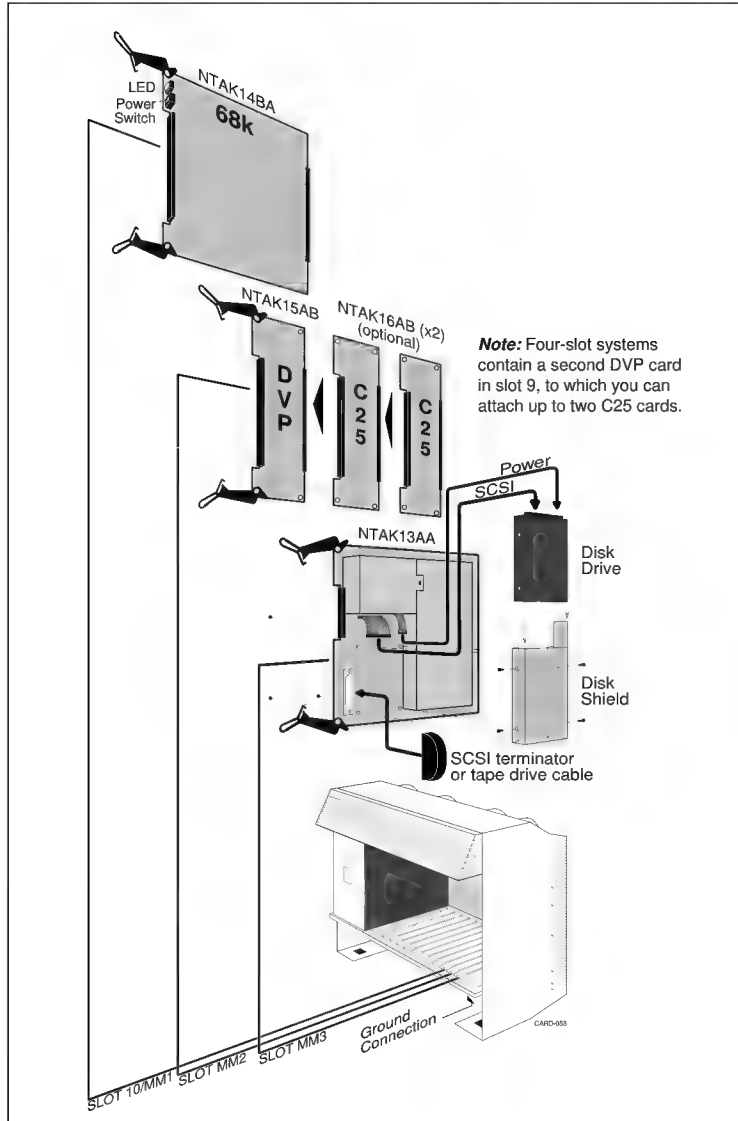
Card Option systems

Introduction

The Meridian Mail Card Option adds voice messaging capabilities to a Meridian 1 Option 11 system.

Hardware installation overview

This diagram shows all the hardware needed for a Meridian 1 Option 11 installation.



Subsystems**RSM Breakout Assembly**

The RSM breakout assembly is a small circuit board that sits in the cavity beneath the three Meridian Mail cards and is connected to connector J10, the rightmost of the 25-pair connectors that run the length of the Meridian 1 cabinet. An MDF cable is attached to this assembly and allows the customer to connect other RS-232 devices to Meridian Mail, most notably those devices required for hospitality, networked, and ACCESS systems.

External Tape Drive

The external tape drive is used to install and upgrade software, and to make backups of Meridian Mail data. It can be attached permanently to the SCSI connector on the disk/power supply card or installed only when needed.

Hospitality systems

Meridian Mail Hospitality Voice Services (HVS) option is used by hotels to offer voice messaging service to their staff and guests. It is designed to work with a hotel's Property Management System (PMS).

The HVS Hardware Kit contains the following:

- 1 RSM breakout assembly
- 1 RSM four-port breakout cable
- 1 25-pair MDF voice cable, 3.1 m (10 feet), male to male
- 1 25-pair MDF voice cable, 3.1 m (10 feet), male to bare wire
- 1 DB25 peripheral cables, 3.1 m (10 feet), female to bare wire
- 1 DB25 gender changer, female to female

Networked systems

The additional hardware installation required in order to take advantage of Meridian Mail's networking capabilities is described in the Networking Hardware Kit.

The Networking Hardware Kit contains the following:

- 1 RSM breakout assembly
- 1 25-pair MDF voice cable, 3.1 m (10 feet), male to male
- 1 25-pair MDF voice cable, 3.1 m (10 feet), male to bare wire
- 1 DB25 peripheral cable, 3.1 m (10 feet), male to bare wire
- 1 Modem

ACCESS systems

Meridian ACCESS allows a UNIX workstation to access many of Meridian Mail's voice messaging features. Customers can use ACCESS to develop and maintain their own telephone-based voice applications.

Beginning with Meridian Mail Release 10.0 and continuing with Release 11 and Release 12, multiple ACCESS links are supported on a single node. This will allow customers to take advantage of more applications. For example, AdminPlus and ACCESS can now run concurrently on the Card Option system.

ACCESS systems require the following additional hardware:

- 1 RSM breakout assembly
- 1 25-pair MDF voice cable, 3.1 m (10 feet), male to male or 1 25-pair MDF voice cable, 3.1 m (10 feet), male to bar wire
- 1 DB25 peripheral cable, 3.1 m (10 feet), male to bare wire
or
1 DB25 peripheral cables, 3.1 m (10 feet), female to bare wire

Disk drive requirements for Card Option

For a disk drive to function correctly with the Meridian Mail card option, it must have no terminators, its SCSI address must be set to zero, its parity must be enabled, and its monitor must be set to start up when the power is turned on.

Storage capacity

The following table lists storage hours by disk size for the Card Option system.

Hard disk sizes	1.0 Gbyte disk					
	240 Mbyte					
	120 Mbyte					
	80Mbyte					
	40 Mbyte					
Nodes	Available storage hours					
1	2	5	10	24	54	100

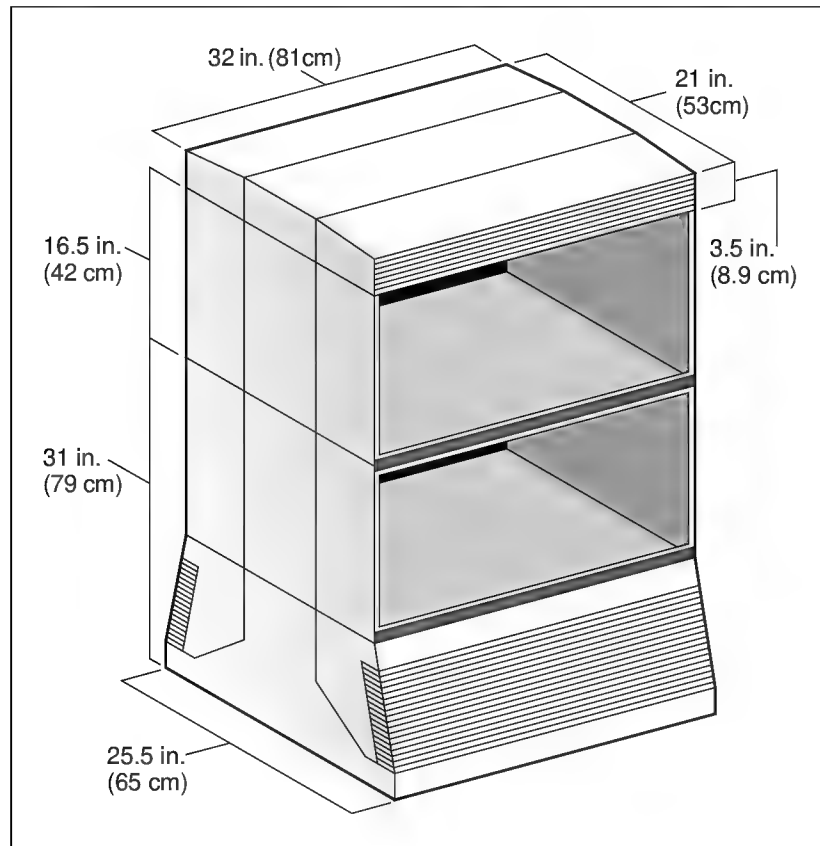
Modular Option systems

Introduction

The Meridian Mail Modular Option is specifically designed for Meridian 1 modular systems, but it can also be used with existing Meridian 1 systems if configured in independent columns. It consists of one or more Meridian 1-compatible Universal Equipment Modules (UEMs), each housing one Meridian Mail node.

Modular Option (2-node) cabinet

This shows a two-node Modular Option cabinet.



Circuit cards and subsystems

The Meridian Mail hardware packaging options are assembled from printed circuit pack (PCP) cards. Each node holds up to eight cards. Along with a hard disk and tape drive (tape drive in the prime node only), each node is equipped with the following cards:

- MMP40 board with 16 Mbyte of RAM
- High Availability Bus Controller (HABC), if in a multi-node configuration (prime node only)
- one or more Voice Processor cards (except for node 1 in a 3-, 4-, or 5-node system)
- RS-232 Service Module (RSM) card (optional)

MMP40

The MMP40 (Meridian Mail Processor 40) card has a 24 MHz 68040 processor, 16 Mbyte of RAM (expandable to 64 Mbyte), a SCSI interface processor, and two RS-232 serial ports. MMP40 handles all voice-related functions and the data link to the PBX.

Note: MMP40 replaces the ESBC, both the 2 and 2.5 Mbyte memory cards, and the SCSI/RAM card of earlier Modular Option systems.

High-Availability Bus Controller (HABC)

The HABC card provides 2 Mbyte of RAM storage for programs and data, and circuitry that allows interconnection of nodes in multinode configurations through an external bus (DVS bus).

Voice Processor

The Voice Processor card provides four voice ports. Each card has two Digital Signal Processors (DSPs) that provide voice compression and Digital Tone Receiver (DTR)/Automatic Gain Control (AGC) functions. The voice channel interfaces to the PBX through the network loop interface. The Network Voice Processor card (NVP), in 16K and 32K configurations, is used for connections to Meridian 1 systems. Some Meridian Mail features (such as Outcalling, AMIS Networking, Meridian Networking, and Fax on Demand) require the 32K NVP card.

RS-232 Service Module (RSM)

The RSM card provides four RS-232 serial ports, a battery-backup clock, and alarm relays. The ports connect to networking and remote administration modems, terminals, and printers.

Disk drive

The disk drive assemblies are 5-1/4 inch, offering 300 Mbyte or 600 Mbyte of storage capacity, or 3-1/2 inch offering 300 Mbyte, 600 Mbyte, 1 Gbyte, or 2 Gbyte of storage capacity.

Tape drive

The tape drive assembly is a Tandberg TDC4220 unit which uses tapes capable of storing up to 2.5 Gbyte.

Note: If you are converting from a previous release of Meridian Mail to Release 11 or greater, you can still use your Archive Corporation Viper unit and DC6150 or DC6250 tapes. You do not have to upgrade your tape drive unit at this time.

If you choose to upgrade to the Tandberg tape drive, the drive will read Archive tapes if a system restore is required during conversion. The Tandberg drive will read tapes containing voice prompts, and full and partial backups.

Please note that some downtime will be required when upgrading to the Tandberg tape drive.

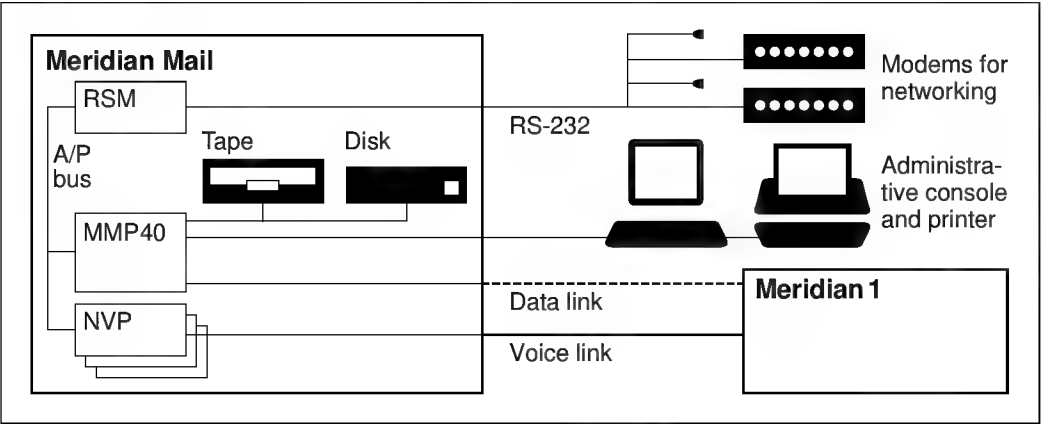
Configurations

The Meridian Mail Modular Option system is configured with MMP40 (68040) processor cards on all nodes.

Meridian Mail Modular Option systems can have up to five nodes. The diagram below shows the interconnections in multinode systems. The various connection options for administrative terminals and printers are not shown in these illustrations.

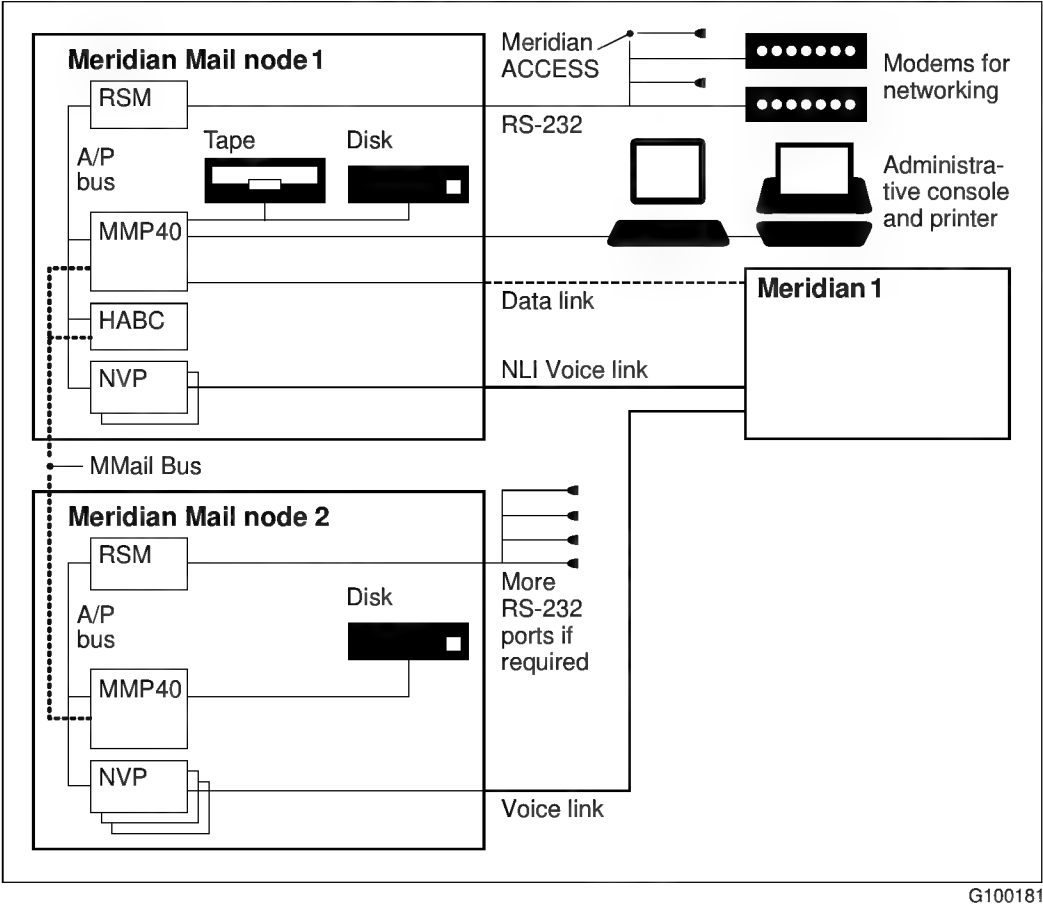
**Modular Option
schematic diagram
(single-node)**

This diagram shows a single-node Modular Option system schematic.



Modular Option
multinode schema

This diagram shows a two-node Modular Option system schematic.



G100181

Modular Option EC systems

Introduction

The Meridian Mail Modular Option EC, a version of Meridian Mail Modular Option, consists of one or more Meridian 1 compatible Universal Equipment Modules (UEMs), each housing up to three Meridian Mail nodes. It is specifically designed for Meridian 1 modular systems, but it can also be used with existing Meridian 1 systems if configured in independent columns.

Circuit cards and subsystems

- The Modular Option EC system merges the hardware and the software of six Modular Option printed circuit packs (PCP) onto three PCPs, thereby substantially increasing the functionality of the system and decreasing the shelf space required to house the cards. Along with the hard disk (two hard disks if you choose the disk shadowing option as described in Chapter 1 “Product Overview”) and the tape drive (in the prime node only), each Meridian Mail Modular Option EC node is equipped with the following cards:
- MMP40 card with 16 Mbyte RAM
- one utility card (dependent on node number)
- one or more voice processors (except for node 1 in a 3-, 4-, or 5-node system), with either 4 or 8 ports (VP4/VP8)

MMP40

The Meridian Mail Processor 40 (MMP40) has a 24-MHz 68040 processor, 16 Mbyte of RAM (expandable to 64 Mbyte), a SCSI interface processor, and two RS-232 serial ports. It replaces the 68K cards in Modular Option EC 68K systems. The MMP40 handles all voice-related functions, provides storage for programs and data, interfaces to the tape and disk storage devices, and connects to the Meridian 1 by means of the AML link.

Utility card

The utility card replaces the HABC and RSM card found in Meridian Mail Modular Option and Options systems. It provides the system timing and network interface facility for

Meridian Mail and other applications. This circuit pack includes four auxiliary RS-232 ports. One utility card is required in every system. A second utility card is required if you have more than 48 ports.

Meridian Mail Option EC can accommodate a second utility card in the second or third module or both, if additional RS-232 ports are needed. The maximum number of utility cards for the various configurations are listed in the following table.

**Utility card locations
for various
configurations**

The following table lists utility card locations for various configurations.

Number of nodes	Shadowed or unshadowed	Maximum number of utility cards supported	Location of utility card(s)
1	Shadowed or unshadowed	1	module 0, slot 5
2	Shadowed or unshadowed	1	module 0, slot 5
3	Unshadowed only	1	module 0, slot 5
3	Shadowed only	2	module 0, slot 5 and module 1, slot 5
4	Shadowed or unshadowed	2	module 0, slot 5 and module 1 slot 5
5	Shadowed	2	module 0, slot 5 and module 2, slot 5
5	Unshadowed	2	module 0, slot 5 and module 1, slot 5

Voice Processing cards (VP8/VP4)

The VP8 and VP4 cards provide eight and four voice ports, respectively. Each card has either four (VP8 cards) or two (VP4 cards) Digital Signal Processors (DSPs) that provide voice compression and Digital Tone Receiver (DTR)/Automatic Gain Control (AGC) functions. The voice ports interface to the utility card by means of a voice bus. The utility card, in turn, interfaces to the Meridian 1.

Disk drive

The disk drive assemblies for Meridian Mail Modular Option EC are 3-1/2 inch disk drives that offer 300 Mbyte, 1 Gbyte, or 2 Gbyte of storage capacity.

Tape drive

The tape drive assembly is a Tandberg TDC4220 unit which uses tapes capable of storing up to 2.5 Gbyte.

Note: If you are converting from a previous release of Meridian Mail to Release 11 or greater, you can still use your Archive Corporation Viper unit and DC6150 or DC6250 tapes. You do not have to upgrade your tape drive unit at this time.

If you choose to upgrade to the Tandberg tape drive, the drive will read Archive tapes if a system restore is required during conversion. The Tandberg drive will read tapes containing voice prompts, and full and partial backups.

Please note that some downtime is required when upgrading to the Tandberg tape drive.

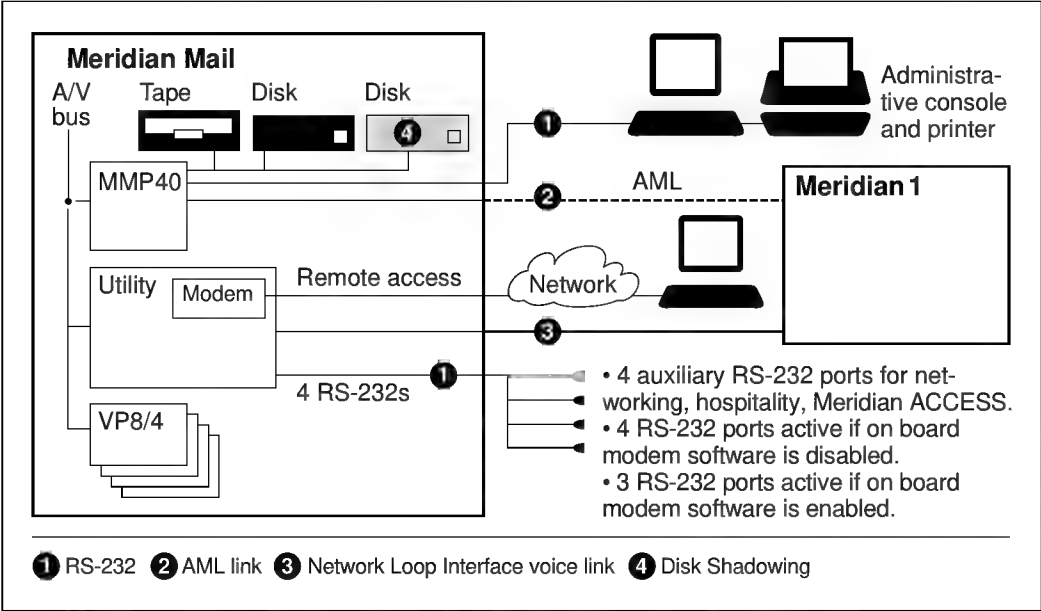
Configurations

The Meridian Mail Option EC system contains MMP40 (68040) processor cards on all nodes. Each voice node can support up to 24 voice ports. Therefore, a 5-node MMP40 system can support up to 96 voice ports.

Modular Option EC systems can be configured with up to five nodes. The following two schematic diagrams show the alternative card configurations. The various connection options for administrative terminals and printers are not shown in these illustrations.

**Modular Option EC
schematic diagram
(single-node)**

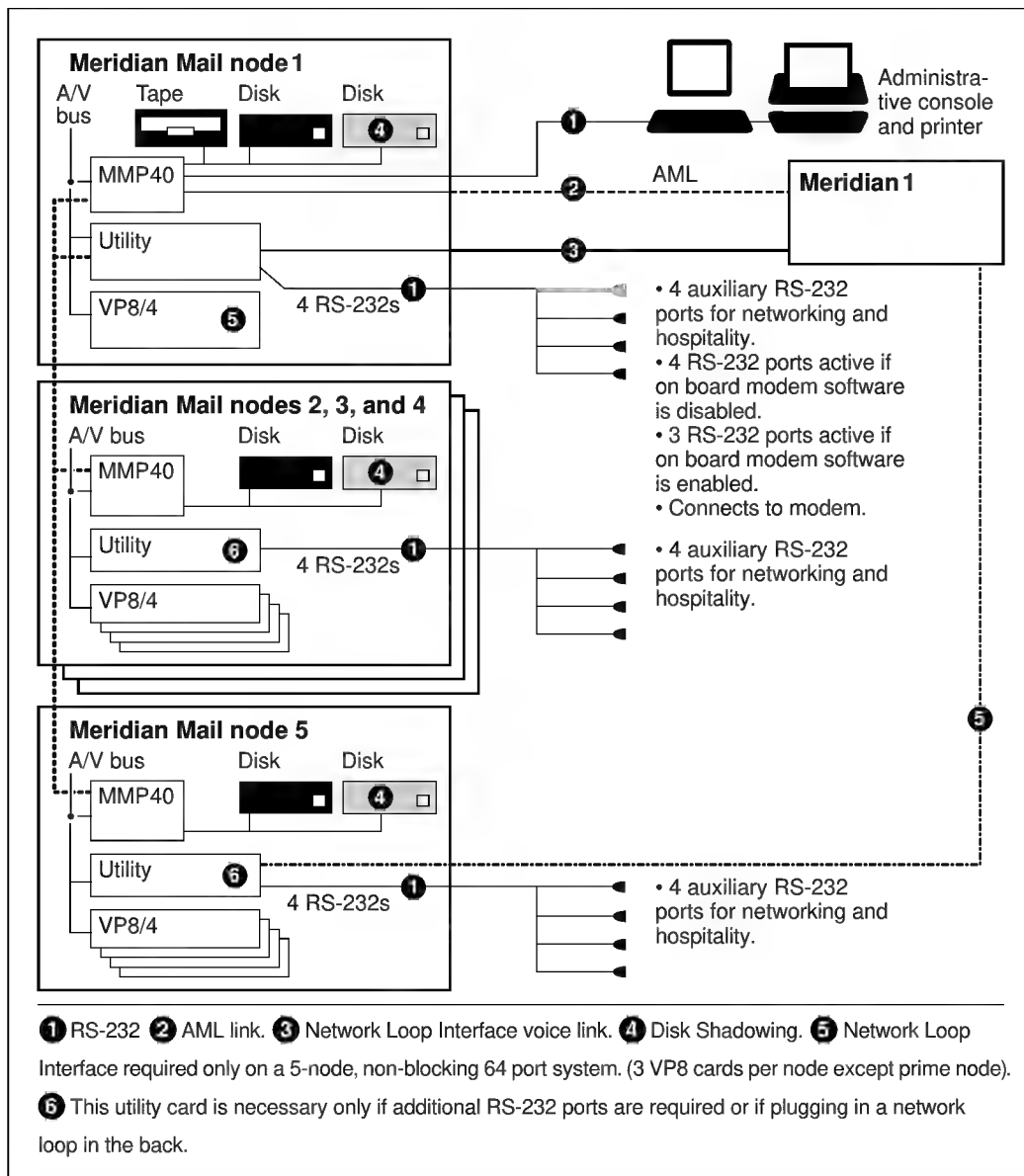
This shows a schematic diagram single-node Modular Option EC.



G100182

**Modular Option EC
schematic diagram
(2-, 3-, 4-, or 5-node
systems)**

This shows a schematic diagram multi-node Modular Option EC.



G100184

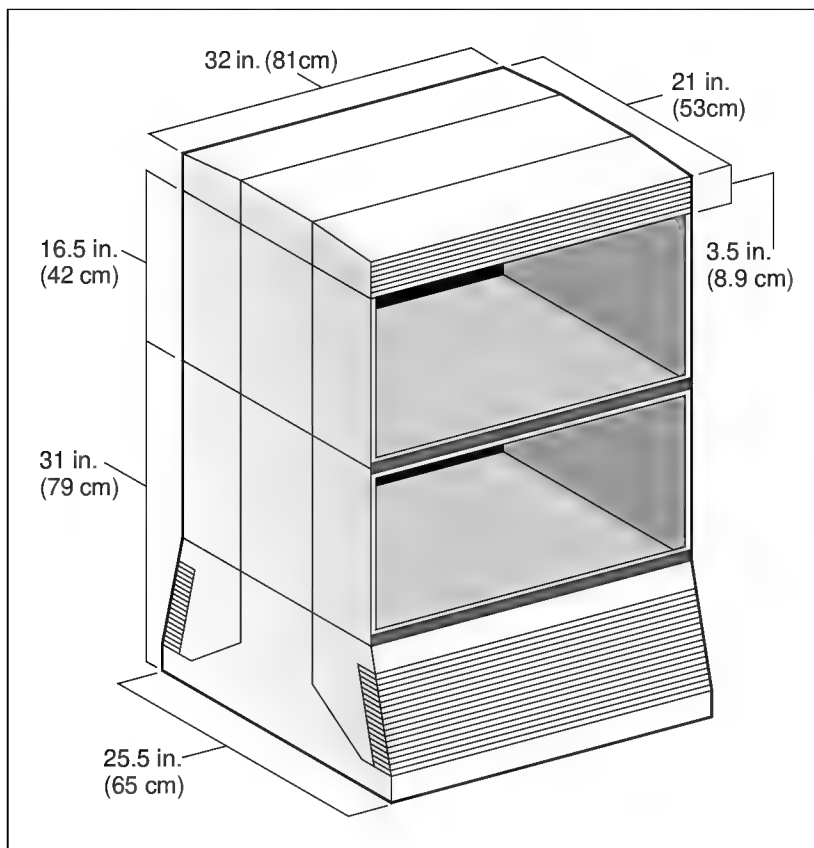
Modular Option GP systems

Introduction

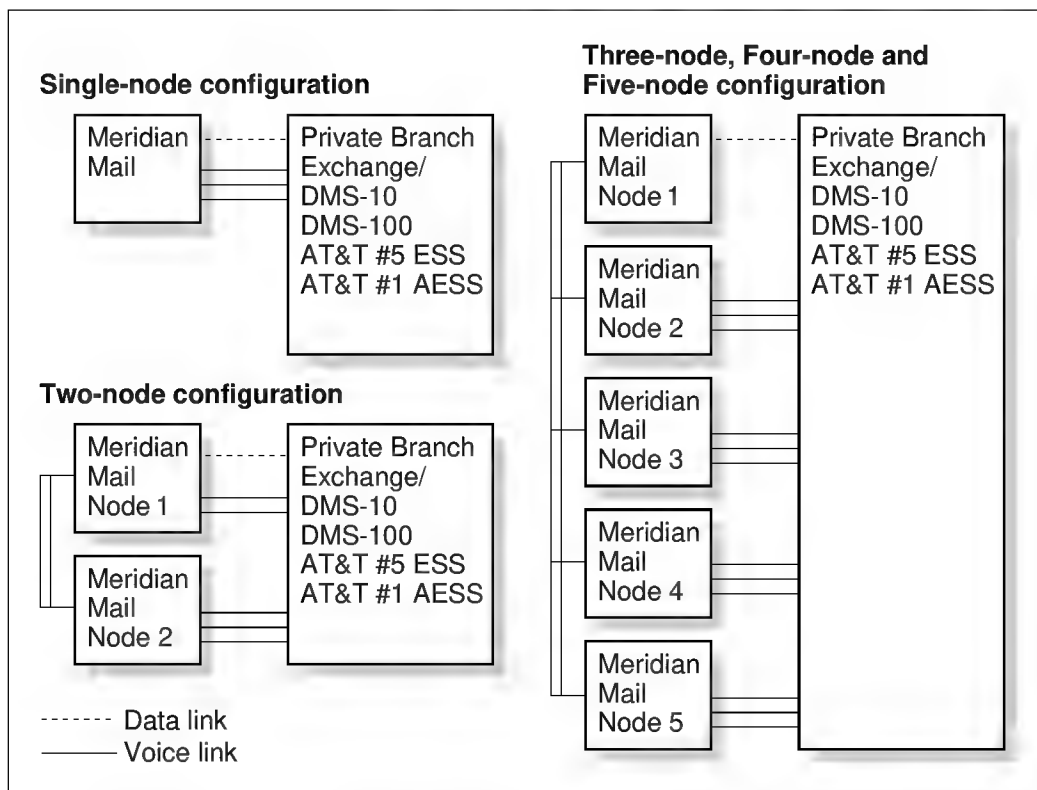
The Modular Option GP hardware platform consists of one or more Universal Equipment Modules (UEMs), each housing one Meridian Mail node. The Meridian Mail Modular Option GP system can be configured with up to five nodes. Each node contains an MMP40 (68040) processor card.

Modular Option GP cabinet

This diagram displays the dimensions of the Modular Option GP cabinet.



Three configurations This diagram shows three different configurations of the Modular Option GP system.

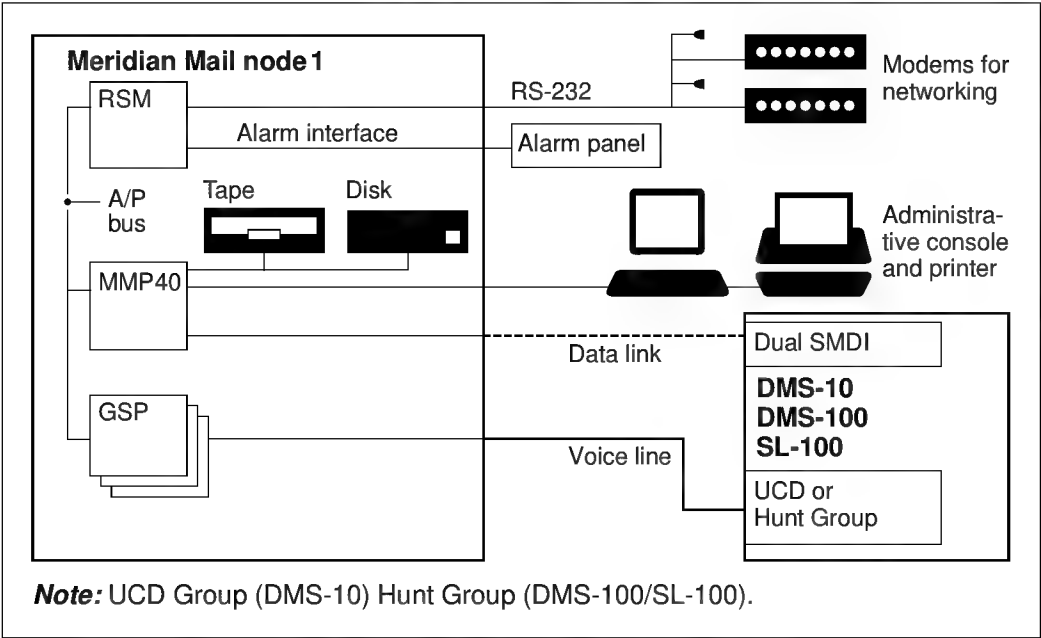


G100616

Schematic diagram This diagram shows the interconnections of circuit cards and subsystems for single-node configurations.

Single-node

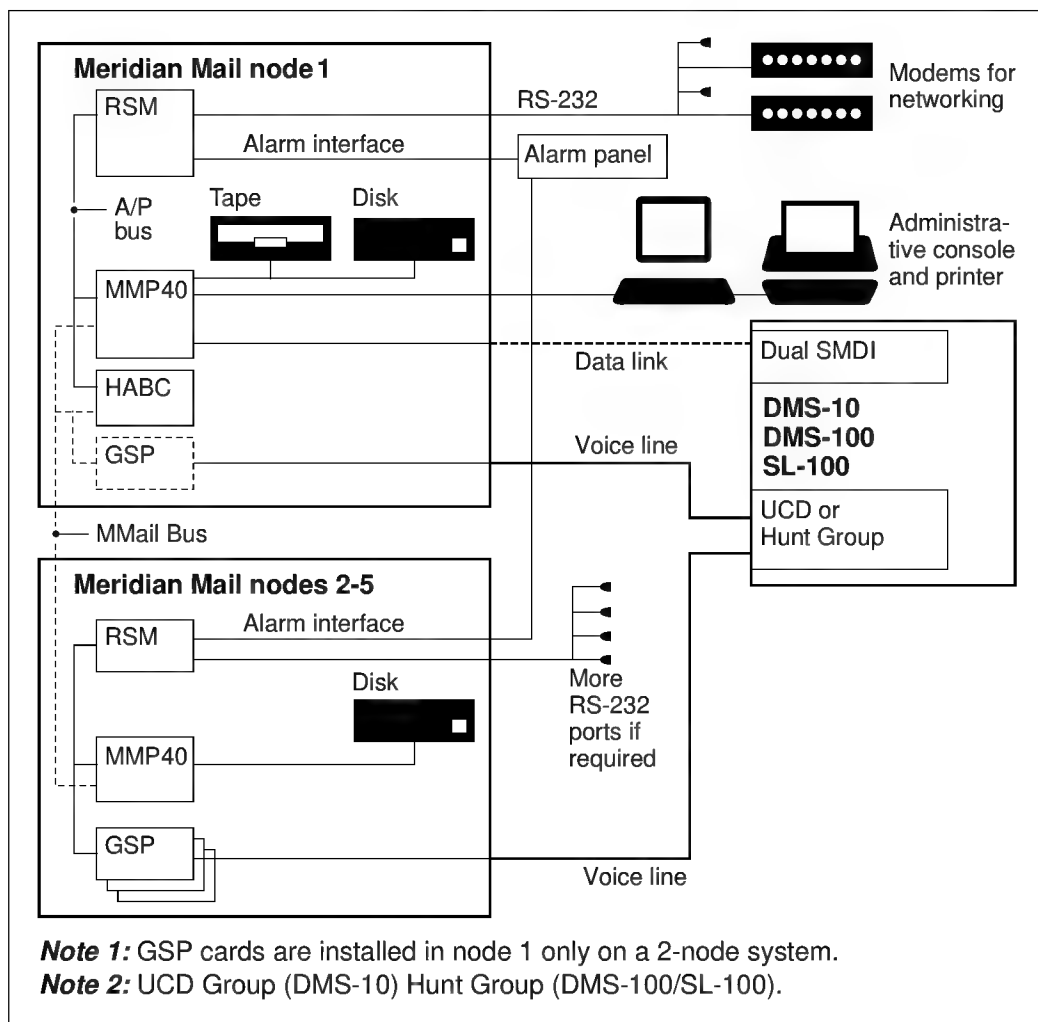
This diagram shows the schematic of a single-node Modular Option GP system.



G100617

Multi-node

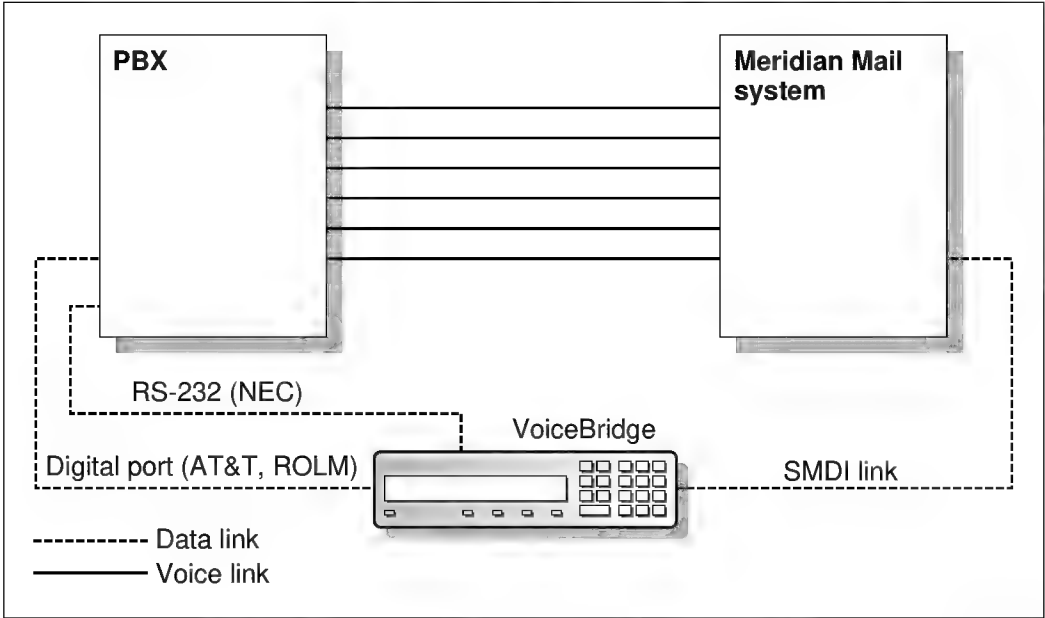
This diagram shows the schematic of a multi-node Modular Option GP system.



G100618

Interconnections

This diagram shows the interconnections in a multi-node system.



G100614

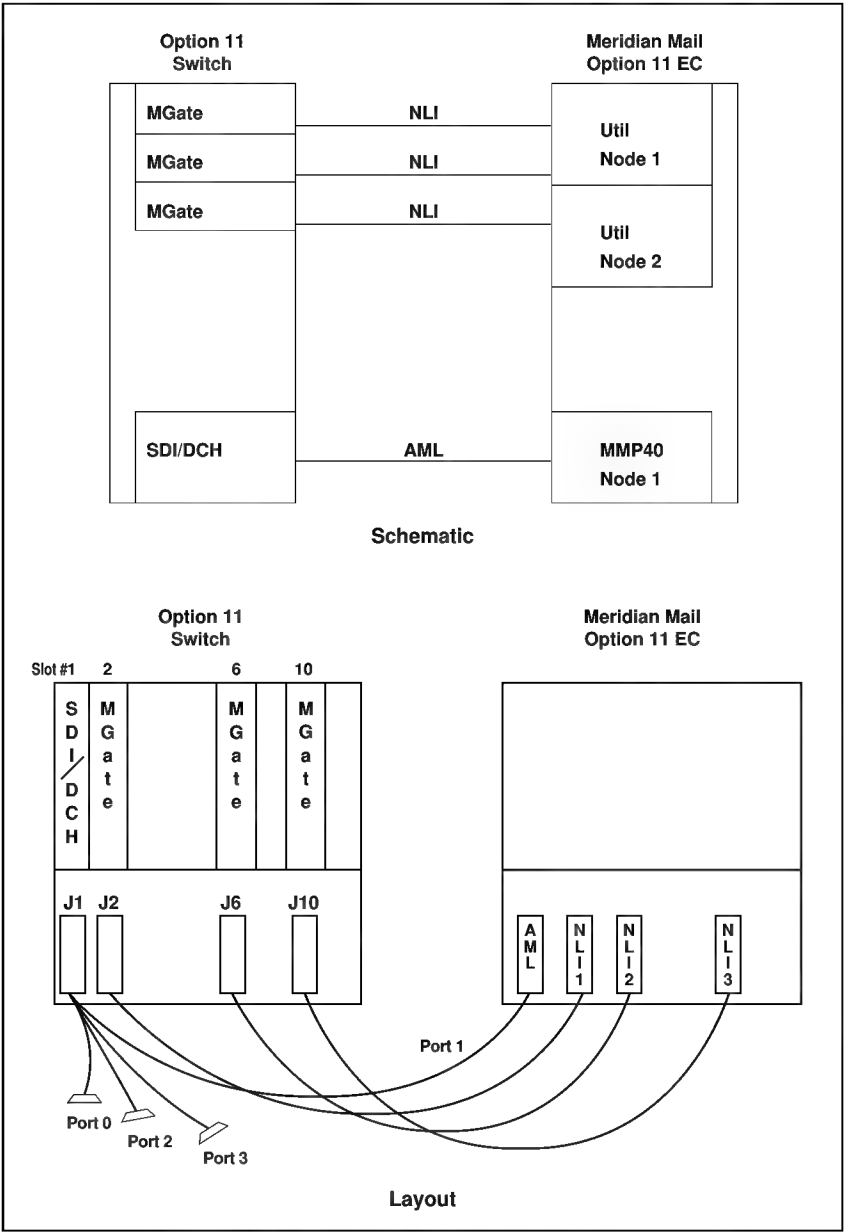
EC-11 systems

Introduction

The EC-11 platform is a modified two-node Modular Option EC. It is built for clients who have a Meridian 1 Option 11 switch, and who need more than the 12 Meridian Mail ports available through the Meridian Mail Card Option system that can be built into the Option 11 switch.

The EC-11 is housed in a separate cabinet from the Option 11 switch. The EC-11 can accommodate two nodes in the same cabinet. Each node has a separate CPU card and can handle up to 24 voice mail ports for a total of 48 ports.

EC-11 Overview This is a schematic diagram of an EC-11 system.



Chapter 4

Technical specifications

In this chapter

Overview	4-2
Section A: M1 family technical specifications	4-3
Section B: DMS family and SL-100 technical specifications	4-9
Section C: Standards	4-13

Overview

Introduction

This chapter provides the technical specifications for all the Meridian Mail platforms connected to either the M1 or DMS switch.

In addition, this chapter lists the regulatory and environmental standards to which Meridian Mail adheres.

***Section A:* M1 family technical specifications**

In this section

M1 system capacities	4-4
M1 system configurations—an overview	4-6

M1 system capacities

Introduction

The following tables provide information on the features and capacities of Meridian Mail systems. The maximum capacities given in these tables should be considered typical values since they represent various types of information which share a finite amount of disk space. The maximum capacities should be considered recommended values that guarantee efficient and trouble-free operation of the given Meridian Mail configuration.

Maximum capacities common to all systems

The following table describes the maximum capabilities common to all systems.

Feature	Capacity
Voice Services	Voice Service Directory Numbers: • Modular Option and Option EC: 24 000 Up to four languages, subject to disk space availability.
Voice Menu Applications	Voice Menus: • Modular Option and Modular Option EC: 19 hours on System Volume; 100 hours on User Volume • 20 levels of Voice Menus
Voice Forms Applications	The number of Voice Forms definitions per customer is limited to disk space availability. • 1000 responses per Voice Form • Up to 150 fields per Voice Form
User Information	• 360 minutes per mailbox • 999 messages per mailbox
Distribution Lists	The number of system distribution lists is limited to disk space availability. • 120 entries per system distribution list • 9 personal distribution lists per mailbox • 99 entries per personal distribution list
-continued-	

Feature	Capacity
Addresses per message	• 290 addresses for 99 minutes of voice message • 350 addresses for 60 minutes of voice message • 425 addresses for 10 minutes of voice message • 440 addresses for 1 minute of voice message
ACCESS	Refer to Table 1-1 in the <i>Meridian ACCESS Configuration Guide</i> (NTP 555-7001-315).
Networking	65 networking sites
Operating Temperature	40 degrees C (104 degrees F) with thermal shutdown capability
-end-	

M1 system configurations—an overview

Meridian Mail system configurations

The following table shows the configuration values for the Modular Option and the Modular Option EC platforms.

System	1-node	2-node	3-node	4-node	5-node
Maximum directory entries	10 000	10 000	15 000	18 000	25 000
Maximum number of mailboxes	1399 – or 5291 (with 200 hrs)	2516 on node 1 3074 on node 2 – or 10 582 (with 400 hrs)	3074 on each of nodes 2 and 3 – or 10 582 (with 400 hrs)	3074 on each of nodes 2, 3, and 4 – or 15 873 (with 600 hrs)	3074 on each of nodes 2, 3, 4, and 5 – or 21 164 with 800 hrs)
†EC-MMP40 voice channels	4–24	28–48	28–48	52–64	64–96
‡All other voice channels	4–12	16–24	28–32	24–48	40–64
Disk-to-disk backup	no	yes	yes	yes	yes
¥Disk shadowing available	yes	yes	yes	yes	yes
*Maximum networking ports	3	5	7	7	7
Storage hours	5, 11, 24, 36, 54, 100, 200	26, 54, 84, 114, 200, 400	30, 60, 90, 120, 200, 400	45, 90, 120, 180, 300, 600	60, 120, 180, 240, 400, 800
** Storage hours with disk-to-disk backup	n/a n/a	48 78, 108, 190	41 71, 101, 177	72 102, 162, 276	102 162, 222, 374
Maximum personal verifications	5 h sys: 2100 11 h sys: 2100 24 h sys: 3500 36 h sys: 3500 54 h sys: 3500 100 h sys: 5700	26 h sys: 2100 54 h sys: 3500 84 h sys: 3500 114 h sys: 3500 200 h sys: 5700	19 000	19 000	19 000
***Maximum Voice Menus & Forms definitions (hours)	5 h sys: 2 (5) 11 h sys: 2 (11) 24 h sys: 3.5 (24) 36 h sys: 3.5 (36) 54 h sys: 3.5 (54) †100 h sys: 5.4 (100)	26 h sys: 2 (9) 54 h sys: 3.5 (23) 84 h sys: 3.5 (23) 114 h sys: 3.5 (52) †200 h sys: 3.5 (54)	30 h sys: 18 (15) 60 h sys: 18 (30) 90 h sys: 18 (60) 120 h sys: 18 (60) †200 h sys: 18 (100)	45 h sys: 18 (15) 90 h sys: 18 (30) 120 h sys: 18 (60) 180 h sys: 18 (60) †300 h sys: 18 (100)	60 h sys: 19 (15) 120 h sys: 19 (30) 180 h sys: 19 (60) 240 h sys: 19 (60) †400 h sys: 19 (100)

System	1-node	2-node	3-node	4-node	5-node
****Disk drives	1 (2)	2 (4)	3 (6)	4 (8)	5 (10)
Tape drives	1	1	1	1	1
* Numbers in brackets are the number of networking ports for shadowed systems. ** With disk-to-disk backup *** The figures are representative maximum values when Voice Menus and Voice Form Definitions share storage space with Personal Verifications. The figures in brackets represent maximum values when Voice Menus and Form Definitions share storage space with Voice Messaging. **** Numbers in brackets represent shadowed systems. †100-, 200-, 300-, and 400-hour systems are not supported on the Modular Options platform. ‡ Channels are added in increments of 4 ports. ¥ Disk shadowing is unavailable on Options platforms.					

Card configuration for Modular Option The following table shows the values for the card configuration for the Modular Option.

Card	1-node	2-node	3-node	4-node	5-node
4-port voice processor	1–3	4–6	7–8	6–12	10–16
MMP40	1	2	3	4	5
HABC	0	1	1	1	1
RSM	0–1	0–2	0–3	0–4	0–5

Modular Option EC weight and power specifications

The following table provides the weight and power specifications for the Modular Option EC.

System	Weight	Power
1-node	95 kg (215 lbs)	2 A at 220 V AC 6 A at 48 V DC
2-node	163 kg (365 lbs)	4 A at 220 V AC 12 A at 48 V DC
3-node	231 kg (515 lbs)	6 A at 220 V AC 18 A at 48 V DC
4-node	299 kg (665 lbs)	8 A at 220 V AC 24 A at 48 V DC
5-node	367 kg (815 lbs)	10 A at 220 V AC 30 A at 48 V DC

Modular Option weight and power specifications

The following table provides the weight and power specifications for the Modular Option.

System	Weight	Power
1-node	95 kg (215 lbs)	2 A at 220 V AC 6 A at 48 V DC
2-node	163 kg (365 lbs)	4 A at 220 V AC 12 A at 48 V DC
3-node	231 kg (515 lbs)	6 A at 220 V AC 18 A at 48 V DC
4-node	299 kg (665 lbs)	8 A at 220 V AC 24 A at 48 V DC
5-node	367 kg (815 lbs)	10 A at 220 V AC 30 A at 48 V DC

***Section B:* DMS family and SL-100 technical specifications**

In this section

Modular Option GP system capacities

4-10

Modular Option GP system capacities

Introduction

The following tables provide information on the features and capacities of the Meridian Mail Modular Option GP platform. The maximum capacities given in these tables should be considered typical values since they represent various types of information which share a finite amount of disk space. The maximum capacities should be considered recommended values that guarantee efficient and trouble-free operation of Meridian Mail.

Maximum capacity of system

The following table describes the maximum capacity of the DMS and SL-100 systems.

Feature	Capacity
Voice Services	Voice Service Directory Numbers: 24 000 Up to four languages, subject to disk space availability
Voice Menu applications	Voice Menus: 19 hours for System Volume; 100 hours for User Volume 20 levels of Voice Menus
Voice Forms applications	The number of Voice Forms definitions per customer is limited to disk capacity. • 1000 responses per Voice Form • Up to 150 fields per Voice Form
User information	• 360 minutes per mailbox • 999 messages per mailbox
Distribution lists	The number of system distribution lists is limited to disk capacity. • 120 entries per system distribution list • 9 personal distribution lists per mailbox • 99 entries per personal distribution list
ACCESS	Refer to Table 1-1 in the <i>Meridian ACCESS Configuration Guide</i> (NTP 555-7001-315).
Networking	49 networking sites
Operating temperature	40 degrees C (104 degrees F) with thermal shutdown capability
SMDI links	12 links for multi-DMS-10s, DMS-100s, or SL-100s

**Meridian Mail
configuration**

This table displays the configuration of a Modular Option GP.

System	1-node	2-node	3-node	4-node	5-node
Directory entries mailboxes	10 000 1399 (or 5 291 with 200 hrs.)	10 000 2516 on node 1 3074 on node 2 (or 10 582 with 400 hrs.)	15 000 3074 on each of nodes 2 and 3 (or 10 582 with 400 hrs.)	18 000 3074 on each of nodes 2,3, and 4 (or 15 873 with 600 hrs.)	25 000 3074 on each of nodes 2, 3, 4, and 5 (or 21 164 with 800 hrs.)
channels	4, 8, 12	16, 20, 24	32	24, 28, 32, 36, 40, 44, 48	40, 44, 48, 52, 56, 60, 64
networking ports	4	8	12	16	20
disk/disk backup	no	yes	yes	yes	yes
storage hours	11, 24, 36, 54, 100, 200	26, 54, 84, 114, 200, 400	30, 60, 90, 120, 200, 400	45, 90, 120, 180, 300, 600	60, 120, 180, 240, 400, 800
*storage hours	N/A	48, 78, 108	41, 71, 101	72, 102, 162	102, 162, 222
maximum number of Personal Verifications	5 h sys: 2100 11 h sys: 2100 24 h sys: 3500 36 h sys: 3500 54 h sys: 3500	26 h sys: 2100 54 h sys: 3500 84 h sys: 3500 114 h sys: 3500	19 000	19 000	20 000
**maximum number of Voice Menus & Form Definitions (h)	5 h sys: 2 (5) 11 h sys: 2 (11) 24 h sys: 3.5 (24) 36 h sys: 3.5 (36) 54 h sys: 3.5 (54) 100 h sys: 5.4 (100)	26 h sys: 3.5 (9) 54 h sys: 3.5 (23) 84 h sys: 3.5 (23) 114 h sys: 3.5 (52) 200 h sys: 5.4 (100)	30 h sys: 18 (15) 60 h sys: 18 (30) 90 h sys: 18 (60) 120 h sys: 18 (60) 200 h sys: 18 (100)	45 h sys: 18 (15) 90 h sys: 18 (30) 120 h sys: 18 (60) 180 h sys: 18 (60) 300 h sys: 18 (100)	60 h sys: 19 (15) 120 h sys: 19 (30) 180 h sys: 19 (60) 240 h sys: 19 (60) 400 h sys: 19 (100)
***disk drives	1 (2)	2 (4)	3 (6)	4 (8)	5 (10)
tape drives	1	1	1	1	1
* With disk-to-disk backup option ** The figures are representative maximum values when Voice Menus and Form Definitions share storage space with Personal Verifications. The figures in brackets represent maximum values when Voice Menus and Form Definitions share storage space with Voice Messaging. *** Numbers in brackets represent shadowed systems.					

Maximum number of cards The following table shows the maximum number of cards in the system.

Card	1-node	2-node	3-node	4-node	5-node
MMP40	1	2	3	4	5
HABC	n/a	1	1	1	1
Voice processor	3	6	8	12	16

Weight and power requirements The following table describes the weight and power requirements for the DMS and SL-100 systems.

System size	Weight	Power
1-node	95 kg (215 lbs)	10 A at 48 V DC
2-node	163 kg (365 lbs)	18 A at 48V DC
3-node	231 kg (515 lbs)	27 A at 48 V DC
4-node	299 kg (665 lbs)	36 A at 48V DC
5-node	367 kg (815 lbs)	44 A at 48 V DC

Section C: Standards

In this section

Regulatory standards	4-14
Environmental requirements	4-15

Regulatory standards

Overview

Meridian Mail systems comply with all of the following regulations.

Safety

- Underwriters Laboratory 478
- Underwriters Laboratory 1459
- Canadian Standards Association (CSA) 22.2.7
- Canadian Standards Association (CSA) C13J-J1970

Electromagnetic interference

- United States Federal Communications Commission (FCC), Rule 15, Subpart J, Class A
- United States Federal Communications Commission (FCC), Rule 68
- Department of Communications (DOC) C108.3.1J-J1975
- Department of Communications (DOC) CS03

International standards

International standards are met on a country-by-country basis.

Environmental requirements

Introduction

Meridian Mail requires no special environmental considerations above and beyond those required to accommodate your existing switching equipment. Detailed information on Meridian Mail environmental specifications are provided in the *Site and Installation Planning Guide* (NTP 555-70x1-200).

Meridian Mail hardware has the same environmental specifications as the Meridian 1. For detailed information on these requirements, refer to *Installation and Acceptance (SL-1)* (NTP 553-2431-200).

Index

A

ACCESS, 1-38
 links, 3-6
access
 mailbox, 1-14
administration, 2-3
AMIS Networking, 1-19
AML link, 3-6
automatic maintenance, 2-2

B

bulk provisioning, 1-10

C

call answering, 1-13
 VMUIF, 1-30
class of service
 mailbox, 1-14
comprehensive upgrade, 1-9
console port speed
 changing, 3-3

D

dialing options
 MMUI, 1-23
dialing translations
 enhancements, 1-9
disk shadowing, 1-37
disk-to-disk
 backup, 1-37
dual language prompting

MMUI, 1-23

E

Enterprise Networking, 1-12

F

fax on demand, 1-33

G

greetings
 mailbox, 1-15
 MMUI, 1-20

H

hospitality voice services
 MMUI, 1-26

I

IMA, 1-4
Integrated Mailbox Administration (IMA), 1-4

M

mailbox
 access, 1-14
 AMIS Networking, 1-19
 class of service, 1-14

- greetings, 1-15
- help, 1-19
- message playback, 1-16
- message send, 1-17
- password, 1-14
- mailbox access
 - VMUIF, 1-28
- mailbox password
 - VMUIF, 1-27
- Meridian ACCESS, 1-38
- Meridian Connections, 1-7
- Meridian Mail Reporter, 1-38
 - link, 3-7
- message playback, 1-16
 - MMUI, 1-20
 - VMUIF, 1-29
- message reply
 - MMUI, 1-21
- message send, 1-17
 - MMUI, 1-22
 - VMUIF, 1-29
- MMUI
 - dialing options, 1-23
 - dual language prompting, 1-23
 - greetings, 1-20
 - hospitality voice services, 1-26
 - message playback, 1-20
 - message reply, 1-21
 - message send, 1-22
 - Network Message Service, 1-26
 - networking, 1-23
- Modem
 - Part number, 3-10
- modem
 - networking, 3-4
 - remote access, 3-4
- multi-SMDI, 1-37

N

- Network Message Service (NMS)
 - MMUI, 1-26
- Networking
 - Installation, 3-9-??
- networking
 - MMUI, 1-23
- networking modem, 3-4

O

- Optional features
 - Networking
 - Installation, 3-9-??

P

- password
 - mailbox, 1-14
- password suppression, 1-12

R

- remote access modem, 3-4
- Reporter link, 3-7

S

- selective backup, 1-10
- shadowing
 - disk, 1-37
- SMDI link, 3-6
- system administration, 2-3
- system capacities
 - M1, 4-4
 - Mod Op GP, 4-10

T

- terminal link
 - changing, 3-3
- touch tone features
 - VMUIF, 1-27

U

- universal message analyzer, 1-10
- user interface
 - VMUIF, 1-29

V

VMUIF

- call answering, 1-30
- mailbox access, 1-28
- mailbox password, 1-27
- message playback, 1-29
- message send, 1-29
- touch tone features, 1-27
- user interface, 1-29
- voice forms, 1-33
- voice menu applications, 1-33
- voice messaging, 1-13

Meridian Mail

Messaging Overview

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